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USSR Report

AGRICULTURE

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**USSR REPORT
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MAJOR CROP PROGRESS AND WEATHER REPORTING

SNOW RETENTION MEASURES EMPLOYED IN KIRGHIZ SSR

Frunze SOVETSKAYA KIRGIZIYA in Russian 16 Feb 85 p 1

Article by K. Kyshtobayev, head of the Irrigation Department of the Kirghiz Scientific Research Institute of Farming and Candidate of Agricultural Sciences; A. Manayenko, head of the Department of Mechanization and Candidate of Technical Sciences; D. Kornev, senior scientific worker and Candidate of Agricultural Sciences: "More Snow -- More Grain"/

Text / The agricultural crop yields obtained from non-irrigated lands are directly dependent upon the supplies of productive moisture available in the soil. Thus the retention of snow out on the fields serves as an effective means for promoting the accumulation of moisture in the soil, for preventing deep freezing of the ground and the formation of an icy crust on the soil's surface, it reduces the runoff of thaw water and the erosion of fine earth and it promotes the warming of the winter crops.

According to data supplied by the All-Union Scientific Research Institute of the Grain Economy, snow retention under our conditions promotes an increase in the retention of productive moisture in the one-half meter soil layer by 40-50 millimeters. As a result, during years marked by favorable weather conditions the increase in cereal grain crop yield amounts to from 1.4 to 2.2 quintals per hectare, for average moisture conditions -- from 3 to 5.4 and during extremely dry conditions when there is almost no rainfall throughout the summer and hot weather prevails -- 10 quintals or more. Computations carried out on the economic effectiveness have shown that snow retention work furnishes an average of 28-30 rubles of net income per hectare.

The data of scientific institutes and the experience of leading farms testifies to the fact that snow retention work is most effective in regions where strong winds predominate during the winter period, the snow cover is relatively stable and the height of such snow cover reaches 15-20 centimeters.

Strong winds are observed during the winter on non-irrigated lands in our republic only in certain zones -- in the eastern Priissaykkul region, the Kochkor Depression, the piedmont regions of Osh and Talas oblasts and also on the non-irrigated precipitation impoverished lands of the Chu River Valley, located near the Kurday Pass where snow retention work is a required agricultural method for accumulating moisture in the soil. However it is not producing a positive effect during the winter periods in the Chu River Valley,

which are characterized by a low quantity of snow. Thus the snow retention work carried out in past years on the fields of the Kirghiz Experimental-Breeding Station for Sugar Beets and at the kolkhozes Krasnaya Zarya in Sokulukskiy Rayon, imeni Engel's, Druzhba and Rossiya in Moscow Rayon, imeni Il'ich in Kalininskiy Rayon, 40 Let Oktyabrya and imeni Kochkorbayev in Issyk-Atinskiy Rayon has for all practical purposes not produced any noticeable advantages compared to tracts on which snow retention work was not carried out.

This winter, as a result of a considerable amount of precipitation during the month of December, the height of the snow cover in the Chu River Valley reached 20-40 centimeters. Under these conditions, great importance was attached to carrying out snow retention work. Meanwhile, proper attention is not being given in all areas to this method for accumulating moisture in the soil. By 11 February 1985, snow retention work had been carried out on 37,700 hectares in rayons of republic subordination. A great amount of work is being carried out in Osh Oblast. Here the kolkhozes and sovkhozes formed snow embankments on 38,500 hectares. On fields in the Priissyykulya region, snow was retained on 13,400 hectares.

An abundant snowfall which occurred on 12 February in the Chu and Talas river valleys raised the possibility of carrying out snow retention work once again here. The height of the snow cover in the Chu River Valley amounted to roughly 12-21 centimeters and in the Talas River Valley it increased by 7 centimeters.

Snow retention work is usually carried out 2-3 times following abundant precipitation. The most productive and cheapest method for carrying out this work -- the formation of embankments on the fields using an SVU-2.6 snowplow-embankment forming machine. Use can also be made for this purpose of a KZU-0.3 unit in a levelling variant, graders and home-made snowplows and if the snow cover is not very high use can be made of conical rollers from Szs-2.1 or SZP-3.6 sowing machines ganged with a caterpillar tractor by means of an SP-11 hitch. Instead of a hitch, use can also be made of the framework of an LDG shallow plow, on which rollers are installed in one line and with no angle of attack in place of disk batteries.

Snow retention work using an SVU-2.6 snowplow on fallow fields and autumn plowed land is carried out when the height of the snow cover is not less than 10-15 centimeters and on winter crop sowings -- 15-18 centimeters. The snow embankments should ideally be formed perpendicular to the direction of the prevailing winds and on fields marked by a considerable slope -- crosswise to the slope. There is no need for carrying out snow retention work where a stable snow cover is found on unfrozen soil.

The snow embankments must be formed at a distance of 3-5 meters from each other and their height, even when the thickness of the snow cover is minimal, must be no less than 35 centimeters. When the work is carried out on fields occupied by winter crops and on which the snow cover is less than 15 centimeters, a preference should be shown for the use of home-made wooden snowplows.

Taking into account the experience of past years, it is recommended that snow retention work be carried out mainly on the republic's non-irrigated lands when the height of the snow cover is not less than 10-15 centimeters. This method

produces the greatest effect on fallow fields considered to be rather uniform in terms of relief and also on autumn plowed fields. When the thickness of the snow cover is more than 20 centimeters, it can also be employed on fields occupied by sowings of winter crops and perennial grasses. Snow retention work extends the snow melting period and reduces the runoff of thaw waters from the fields, while increasing the supplies of productive moisture in the soil.

7026
CSO: 1824/369

SPRING FIELD WORK PROGRESS IN KIRGHIZ SSR

Moscow PRAVDA in Russian 15 Apr 85 p 1

Article by V. Shirokov, Kirghiz SSR: "The Sources for a Harvest"

Text How changeable the weather is. Yesterday it rained and today the sun is very warm in the Chu River Valley. Clouds of dust are following the sowing machines out on the fields. The time for commencing the sowing work must be narrowed down to precisely one day. Any delay in carrying out the moisture retention work can cause crop losses.

The sowing commenced coincidental with the very first weather "windows."

Wherever one glances at the present time, tractor assemblies can be seen in operation in all areas. The sowing work is being carried out along a broad front.

"We count the minutes as well as the hours" commented the 1st secretary of the Sokulukskiy Rayon Party Committee K. Turganov, "Spring was late by 1 week in reaching the fallow land and this lag can be made up only if the machine operators and field crop growers carry out their work in an efficient and organized manner. The brigade contract method is proving to be of assistance; 80 percent of the field crop growing collectives have converted over to the use of this system. The people have responded well to the introduction of family contracts. Thus, 13 family teams will grow corn at the Dzhangi-Dzher Sovkhoz. This will have a noticeable effect on increasing interest in shortening the sowing periods and, in the final analysis, in increasing the harvest. We plan on obtaining 107,000 tons of grain, against a plan which calls for only 107,000 tons. The sowing work is continuing and we are anxiously thinking about the forthcoming harvest -- we are concerned over the shortage of corn harvesting combines. Very few such units are being made available.

The republic's fields are found at several "levels." Although many farms in Osh Oblast are completing their sowing work, still others in the high-mountain Issyk-Kul region and the Tyan-Shan valleys are only just now making preparations for this work. But there is one interesting fact. The efficiency of the farmers and their organizational ability are having an effect. Today, with 14,200 field crop husbandry brigades having converted over to the use of collective contracts, a figure which is greater by a factor of 1.5 than that for last year,

the passage of time is being viewed differently. For in the final analysis, it decides the fate of the future harvest.

But this is not the only sign of this year's sowing campaign. The use of the industrial approach for carrying out work on the land made it possible this year to plan a programmed crop for almost 160,000 hectares. The foundation for this experiment was established last year at the kolkhozes Druzhba, imeni XXI Parts"yezda and Krasnaya Zarya in Sokulukskiy Rayon and at some other farms.

This year the farmers in the Kirghiz SSR adopted raised socialist obligations: to raise the gross yield of grain to 1,510,000 tons. The goal set by the grain growers is not a simple one. It will be impossible to achieve this goal in the absence of the active introduction of intensive technologies, the mastering of zonal farming systems on an extensive scale or progressive labor organization. And work is being carried out in this direction, albeit not as rapidly as one would like.

Thus delays are taking place in the repair of powerful tractors. Prior to the commencement of field operations, 63 K-700 tractors turned out to be inoperable. This also held true for more than 200 T-150K machines. Actually, the republic does not have its own base for carrying out restoration work on equipment. The Sel'khoztekhnika workers had to seek assistance from workshops in Kazakhstan and Uzbekistan. And indeed the pool of powerful tractors is increasing with each passing year.

The preparation of the intra-farm irrigation network and the hydraulic engineering installations is lagging behind the level for last year. It turned out that many land reclamation systems had not been prepared. The water management workers blamed this fact on the stern winter conditions and the deep layer of snow. At the same time, by no means was the best use made of these moisture supplies in all areas. Snow retention work was carried out in a formal manner in Keminskiy, Issyk-Atinskiy and Kantskiy rayons. Many water areas remained unfilled.

Owing to the conditions found in the republic, winter wheat produces the highest yields. Its sowings occupy approximately 300,000 hectares. For the most part, it endured the winter conditions quite well. But in some zones it was not possible to apply a top dressing to this crop on a timely basis. Thus a top dressing was applied to only two thirds of the sowings in Osh Oblast. The farms in Sovetskiy, Lyaylyakskiy and Alayskiy rayons were especially late in carrying out this work.

The late spring coupled with frequent rainfall called for the field crop workers of Kirghizia to follow a tense work rhythm. The task must be carried out during the best periods and in a high quality manner, the agroindustrial associations must ensure that the farms have all of the means at their disposal for carrying out their work and they must mobilize the efforts of the partners in the interest of successfully carrying out the campaign. Only their overall concern for the final result -- a rich harvest -- will serve to guarantee the carrying out of the tasks of the final year of the five-year plan and the Food Program.

1985 PEST, DISEASE FORECAST FOR KIRGHIZ SSR

Frunze SEL'SKAYA KHOZYAYSTVO KIRGIZII in Russian No 4, Apr 85 pp 30-31

Article by N. Salpagarov, chief of the Administration for Protection of Plants of Kirgizsel'khozkhimiya and I. Smolich, head of a republic laboratory for forecasts and diagnostics: "Forecast of Spread of Agricultural Crop Pests and Diseases During 1985"

Excerpts / Grain crops. Grain beetle. Last year, the principal amount of damage caused by larvae was observed in Osh Oblast. This spring an increased number of the pests will be observed in Suzakskiy, Dzhany-Dzholskiy, Uzgenskiy, Sovetskiy, Kara-Suyskiy and Leninskiy rayons in Osh Oblast; it is expected that the larvae will cause damage in the Chu River Valley on farms in Panfilovskiy, Sokulukskiy and Kaminskij rayons on an area of approximately 8,000-9,000 hectares.

Treatments should be carried out against the larvae of the grain beetle only at night, when the number of larvae is 2-3 specimens per square meter and using one of the following preparations: bazudin 40 percent s.p. -- 2.5 kilograms per hectare, metaphos 40 percent k.e. -- 1 kilogram per hectare, chlorophos 80 percent -- 2 kilograms per hectare.

Grain leaf beetle, greenbug and thrips are being encountered in all of the republic's zones. A considerable amount of damage is possible on an area of up to 60,000 hectares. Measure for combating the pests: spraying the sowings with 40 percent k.e. metaphos (0.5 kilograms per hectare).

The frit-fly will cause damage to wheat, barley and corn in Issyk-Kul Oblast on an area of up to 1,700 hectares under favorable conditions. For combating this pest, use should be made of 40 percent k.e. metaphos -- 0.5 kilograms per hectare, 80 percent chlorophos -- 1 kilogram per hectare.

In view of the damp conditions encountered this spring, considerable infection of the grain crops by powdery mildew, helminthosporiosis and septoriaisis is possible. For combating powdery mildew in grain crops, an optimum plant density must be maintained in a strict manner and spraying should be carried out using sulphur s.p. -- 6 kilograms per hectare. The following fungicides should be employed against helminthosporiosis and septoriaisis: sineb 80 percent s.p. -- 4 kilograms per hectare, polycarbaccine 80 percent s.p. -- 5 kilograms per hectare. Bayleton 25 percent s.p. -- 0.5 kilograms per hectare is effective against all of the above-mentioned diseases.

Smut diseases. Wheat smut was observed last year in Issyk-Kul Oblast and the Chu River Valley and covered smut -- in Osh and Naryn oblasts. For combating wheat smut, the seed must be treated with vitavax -- 3 kilograms per hectare and benlat (fundazole) -- 2-3 kilograms per hectare. These preparations are also effective for combating covered smut. For combating covered smut, the seed should be treated in advance using damp granozan -- 2 kilograms per ton, or TMD -- 3 kilograms per ton of seed.

Polyphagous Pests

Winter moth. This pest will cause damage to tobacco, corn, beets and vegetable crops, especially in the event of a dry spring.

Wild moth. This pest will cause damage mainly to perennial grasses and grain crops. High concentrations of this pest are possible on pastures in Chatkalskiy Rayon and at Susamyr.

Noticeable damage caused by locusts is expected in Dzhungalskiy, Ak-Talinskiy rayons in Naryn Oblast and in Leninskiy, Frunzenskiy and Batkenskiy rayons in Osh Oblast.

Spider mite. An increased amount of damage caused by this pest is possible following a dry spring.

For combating moth caterpillars, nighttime treatments carried out against the I-III age groups are especially effective. During the flight of the butterflies and the laying of eggs, sprinkling and the release of trichogramma are effective. The following chemicals are recommended: bazudin 40 percent s.p. -- 2 kilograms per hectare, chlorophos 80 percent -- 1 kilogram per hectare, metaphos 40 percent k.e. -- 1 kilogram per hectare and for combating locusts -- metaphos at the rate of 1 kilogram per hectare.

7026

CSO: 1824/349

MEASURES FOR INCREASING GRAIN PRODUCTION IN KIRGHIZ SSR

Frunze SEL'SKOYE KHOZYAYSTVO KIRGIZII in Russian No 2, Feb 85 pp 25-27

Article by L. Kirkin, chief of the Main Administration for Farming of the Ministry of Agriculture for the Kirghiz SSR: "A Leading Technology for the Grain Crop"/

Text Since time immemorial, many people throughout the world have evaluated their wealth and well-being in terms of the level of grain production. The centuries that have passed have not lowered but rather they have strengthened the role played by grain, assigning to it importance not only as a food product but also as a very valuable and most effective source for obtaining livestock husbandry products and also as an important type of raw material for industry.

Thus it was only natural for the decisions handed down during the 26th CPSU Congress, the October (1984) Plenum of the Central Committee and in other party and governmental documents to point out that one of the chief tasks in developing agricultural production throughout the country continues to be that of further increasing grain production based upon constant intensification of this branch.

Guided by the party's instructions, the republic's agricultural workers are devoting thorough attention to carrying out those measures which make it possible, with each passing year, to increase the gross production of grain and to raise the grain crop yields. Despite the fact that during 3 of the last 4 years of the current five-year plan the weather conditions did not favor the cultivation of grain crops, nevertheless the average gross production of grain increased by 306,300 tons compared to the 8th Five-Year Plan and the average yield increased from 15.1 to 23.4 quintals per hectare. During this period, the yield from irrigated lands increased from 19.1 to 32.9 quintals per hectare -- or by 40.2 percent.

During the low-water year of 1984, a yield of 50 or more quintals of cereal grain was obtained under irrigation conditions at the Kolkhoz imeni Lenin in Alamedinskiy Rayon, the Semkhoz /seed farm/ imeni 50-Letiya SSSR and the Dzhany-Dzher Sovkhoz in Sokulukskiy Rayon, the kolkhozes imeni Karl Marks and Rossiya in Moscow Rayon, Novyy Put' in Kalininskiy Rayon, Tendik and Erkin in Suzakskiy Rayon and Uryukty in Issyk-Kulskiy Rayon. Many kolkhozes and sovkhozes annually obtain fine yields of cereal grain from non-irrigated lands.

The achievements of leading workers reveal very convincingly the vast reserves that are available for further increasing grain production. The system of labor organization and the methods for planning and cultivating grain crops being employed on these farms conform fully to the program adopted throughout the country for creating intensive grain production technologies and industrializing the methods being used for the cultivation and programming of grain crop yields. A distinctive feature of the work being performed by leading kolkhozes, sovkhozes, brigades and teams is the fact that all operations concerned with the development of grain crop yields are organized in strict conformity with existing recommendations. And such opportunities are presently available to all of the farms.

The republic's party and soviet organs have carried out a great amount of tense work associated with intensifying specialization in agricultural production in the various oblasts and rayons. Specialization as it exists at the present time fully conforms to the interests of both the state and the republic's farms. Favorable conditions have been created for the rapid mastering of crop rotation plans, for introducing an efficient crop structure into use at each kolkhoz and sovkhoz and for constantly improving the fertility of the land. The task consists of ensuring that maximum use is made of this opportunity, as was done, for example, at the Kolkhoz imeni Lenin in Alamedinskiy Rayon. Here, while obtaining more than 50 quintals of cereal grain from each irrigated hectare, they are finding methods for achieving more complete use of their irrigated land. In recent years, following the grain harvest, the farm has been sowing spring barley as a post-harvest crop on an area of 400 hectares and in the autumn it has been obtaining up to 200 quintals of full-value fodder per hectare for the laying in of silage and for green feed.

An intensification of the technologies employed in the cultivation of grain crops requires improvements in all of the agrotechnical elements comprising these technologies. A breakdown in any element results in irreplaceable crop losses. Many deviations from the established technologies are still being encountered. In the republic's zonal farming systems, which have been developed and published, it is pointed out that the level for grain crop yields is largely dependent upon the schedules for and quality of the principal and pre-sowing soil cultivations and also upon the sowing operations proper. Unfortunately, these requirements are not being met in a number of oblasts, rayons, kolkhozes and sovkhozes. On many farms in Osh, Naryn and Talas oblasts and in a number of rayons of republic subordination, the plowing for winter crops and autumn plowing in behalf of spring grain crops are being dragged out for intolerably long periods. In this regard, it can be said that the best agrotechnical periods for winter crop sowing are being overlooked and the sowing of spring crops is being carried out on fields that were plowed late in the autumn. The result in both instances will be a noticeable decrease in the grain crop yields.

Thus in 1983 the sowing of winter crops on farms in Talas Oblast was delayed by 61 days, in Osh and Issyk-Kul oblasts and in Chuyskiy and Issyk-Atinskiy rayons -- by 57 and in Keminziy, Alamedinskiy, Sokuluksiy, Kalininskiy and Panfilovskiy rayons -- by 50 days.

By 1 November last year, the kolkhozes and sovkhozes in Talas Oblast had fulfilled their winter crop sowing plan by 79 percent, Chuyskiy Rayon -- by 80,

Moscow and Kalininskiy -- by 82 and in Alamedinskiy Rayon -- by 86 percent. Analysis reveals that even with zonal placement of the sowings being taken into account, the optimum sowing periods in the mentioned regions were dragged out by a factor of 2-2.5. Meanwhile, data supplied by the Kirghiz Scientific-Research Institute of Farming convincingly reveals that the best sowing period for winter crops on irrigated land in a majority of the republic's zones is the middle of September and on non-irrigated land -- from the end of September through the first half of October. Data accumulated over a period of many years reveals that an October sowing on irrigated land during the first 10-day period results in a shortfall in grain of 5.3 quintals per hectare, the second 10-day period -- 7.7 and at the end of the third 10-day period -- 13.2-16.3 quintals per hectare.

The role played by clean fallow under non-irrigation farming conditions is invaluable. During some years, the leading farms in the Chu River Valley obtain more than 25 quintals of winter wheat per hectare from clean fallow and in Tyupskiy Rayon in Issyk-Kul Oblast -- up to 40 or more quintals per hectare.

In recent years, many of the republic's kolkhozes and sovkhozes have increased the area of their clean fallow to the amounts required for a crop rotation plan. However, old problems continue to persist in the technology for maintaining this land. On many farms the clean fallow is not worked during the summer, they become overgrown with weeds and thus it makes no sense to maintain them as fallow fields.

Considerable shortcomings in the tending of clean fallow were noted in Ak-Suyskiy Rayon in Issyk-Kul Oblast and on a number of farms in Dzhungalskiy Rayon in Naryn Oblast. Disruptions in the system for tending clean fallow in these rayons resulted in a high degree of field contamination by wild oats and in a considerable shortfall in grain.

The task of specialists attached to oblast and rayon elements and also kolkhoz and sovkhoz specialists during the spring of 1985 consists of eliminating all such disruptions in the system for tending clean fallow and organizing the tending of such land in complete conformity with the existing recommendations. Studies carried out by KirgNPOZ and the practice of farms throughout the republic underscore the high effectiveness of the system of non-mouldboard implements for preparing fallow fields and for autumn plowing in behalf of spring grain crops sown on non-irrigated land. In view of this fact, the farm specialists must display concern and make known their requirements, while Goskomsel'khoztekhnika for the Kirghiz SSR -- must organize the importing of this equipment.

Over the next few years, the republic will be confronted with the task of increasing the area of clean fallow to 85,000-90,000 hectares. In the case of non-irrigated lands, such action will be based upon ensuring that 25 percent of the arable land is made available for use as fallow fields.

In the campaign to achieve high spring grain crop yields, an important role is played by timely and high quality autumn plowing. Leading farms and subunits are directing their efforts towards ensuring that the autumn preparation of soil is carried out and that a bastard fallow character is attached to such work.

As a rule, the Semkhoz imeni 50-Letiya SSSR carries out its fall plowing immediately following the harvesting of the crops and during the period remaining before winter it carries out moisture retention work following precipitation and also extensive cultivations -- as the weeds sprout.

However, proper attention is still not being given to this problem. By 1 January 1984, only 80 percent of the republic's autumn plowing had been carried out in behalf of the future harvest and in Naryn Oblast -- 57, Talas Oblast -- 58, Issyk-Atinskiy Rayon -- 45 and in Sokulukskiy Rayon -- 73 percent. Nor was the situation any better with regard to plowing carried out in behalf of the 1985 harvest. By 1 November 1984, only 52 percent of the republic's autumn plowing had been carried out and on farms in Talas Oblast -- 20, Osh Oblast -- 38, Keminckiy Rayon -- 51, Chuyskiy Rayon -- 57, Kalininskij Rayon -- 49 and in Panfilovskiy Rayon -- 60 percent.

In the technology for obtaining high grain crop yields, a very important role is played by the quality of the seed. At the present time, highly productive varieties of winter and spring crops of local, domestic and foreign breeding have been regionalized in the republic. This includes the winter wheat varieties Eritrospermum-80 and Intensivnaya and spring barley varieties -- Naryn 27, Donetskiy 8, Nadya, Ovsya-Astor and a number of others. Under production conditions on irrigated land, the mentioned winter wheat varieties are capable of furnishing up to 55-65 quintals per hectare and the spring barley varieties -- 40-45 or more quintals of grain per hectare. In the interest of regulating seed production work and ensuring that the republic's kolkhozes and sovkhozes are fully supplied with the required amounts of cereal grain crop seed and that they use only high quality and highly productive seed, the production of seed for grain crops was converted over to an industrial basis. It bears mentioning that many rayspetssemkhozes /rayon specialized seed farms/ are successfully coping with their assigned tasks. However, by no means are the seed farms in Osh Oblast carrying out their assigned functions.

The practice of annually importing seed from without, regardless of prevailing weather conditions, has taken root among farms in the southern part of the republic. Such practice is not only not in keeping with the principles of zealous management, but in fact it brings about a reduction in grain crop yields, since seed is often imported that does not meet the quality standard.

In seed production work, great importance is attached not only to growing fine seed but also to the timely preparation of the seed and to improving it to the required sowing condition. In accordance with the agrotechnical requirements, the cleaning of the seed must be carried out within a month following harvest operations. According to data supplied by Candidate of Economic Sciences A.I. Stepanov, a delay of 4-5 months in carrying out such cleaning work can result in a future crop loss of 10 percent and a delay of more than 6 months -- a crop loss of up to 20 percent. Despite this fact however, the specialized seed farms in many regions are annually dragging out the preparation of their seed and there have been frequent instances of the seed for spring cereal grain crops not being cleaned until spring arrived. The preparation of seed for sowing in the spring of 1985 was organized in a completely unsatisfactory manner. According to the situation on 1 November, the republic's farms had improved only 43.5 percent of their seed to sowing condition. Only four rayons -- Chuyskiy, Issyk-Atinskiy, Kantskiy and Panfilovskiy -- had prepared certified seed in

complete satisfaction of their requirements. The cleaning of seed is being carried out at extremely slow rates in all four oblasts and also in Alamedinskiy, Sokulukskiy and Kalininskiy rayons, despite the availability of a fine logistical base for such seed preparation work. Not one ton of seed was cleaned here in October and overall only 22 and 24 percent of the seed respectively was improved to sowing condition.

An efficient system of fertilization is a very effective factor for sharply raising the grain crop yields. A substantial amount of work has been carried out throughout the republic in connection with ensuring the most effective use of mineral fertilizers on grain crop sowings and on sowings of other agricultural crops. The Kirghiz Scientific Research Institute of Farming and its experimental stations have studied and made recommendations regarding such elements of a fertilization system as the schedules and norms for applying mineral fertilizers, the return from them in the form of yields and their effect in a crop rotation plan.

The local organs of the republic Kirgizzel'khozhimiya Association provide the kolkhozes and sovkhozes regularly with cartograms and participate in the development of plans for the use of fertilizers. Thus the republic's farm specialists have at their disposal everything that is required for utilizing the mineral fertilizers made available to them in a correct and highly efficient manner. Despite this fact however, the actual status of affairs is nevertheless quite different. Just as in the past, many farms continue to use fertilizers without taking into account an entire complex of factors which determine the level of fertilizer effectiveness.

The indicators for yields and for applying mineral fertilizers in behalf of the 1983 grain crops can be cited by way of an example. For the republic as a whole, 157 kilograms of mineral fertilizer in active agent were applied per hectare of cereal grain crop sowing. The average grain crop yield was 24.8 quintals, including under irrigation conditions -- 36.3 quintals per hectare. The highest return from the use of fertilizer was realized at kolkhozes and sovkhozes in Issyk-Kul Oblast, where applications of 128 kilograms of active agent per hectare produced 35.6 quintals of grain, including under irrigation conditions -- 37.4 quintals. The results closest to these figures were obtained on farms in Kantskiy Rayon -- an average of 32.5 quintals and under irrigation conditions -- 37.3 quintals per hectare. But 265 kilograms of active agent were applied per hectare in Kantskiy Rayon, that is, twice as much as in Issyk-Kul Oblast.

In view of the fact that the factor of soil fertility does not have a sharp contrast in the mentioned oblasts or rayon, another factor is the decisive one here -- moisture content of the soil. And truly, the kolkhozes and sovkhozes in Issyk-Kul Oblast are better off from the standpoint of moisture and irrigation water than are other regions of the republic. Beyond any doubt, the application of additional volumes of fertilizer produces a higher return here. The republic's Kirgizzel'khozhimiya Association and the oblast's kolkhozes and sovkhozes must take this fact into account and plan their fertilizer applications accordingly.

The use of mineral fertilizers in Naryn Oblast is characterized by a high degree of effectiveness. An application of 166 kilograms of active agent per hectare produced an average grain yield of 28.5 quintals and under irrigation conditions -- 39.5 quintals per hectare.

Mineral fertilizers are being utilized with a high degree of effectiveness on kolkhozes and sovkhozes in Chuyskiy and Issyk-Atinskii rayons. Here each hectare is being supplied with 260 and 270 quintals of fertilizer in active agent respectively and yet the average yield was 26.2 and 27.3 quintals. Under irrigation conditions, 28 quintals of grain were obtained per hectare in these rayons.

Science and practical experience have proven that the use of fertilizer produces the greatest return in the form of yields under optimum soil moisture conditions, the value for which changes as a change takes place in the plant development phase. This means that the chief factor for obtaining high grain yields under irrigated farming conditions is a correctly planned and properly implemented system of irrigation. However, it should be noted that it is precisely in this area that many problems and unsolved problems are being encountered. Cereal grain crops commence water consumption in late summer through to the beginning of autumn and they complete such work at the beginning of summer, that is, during those periods when water availability is extremely low. Moreover, in the autumn water is supplied mainly for the sowings of technical and vegetable crops, seed plots and so forth. As a result, pre-plowing watering in behalf of grain crops is being removed completely from the technology in a number of zones throughout the republic and only one to one and a half waterings is being provided during the spring and early summer period. Thus, in the Chu River Valley, the farms in Alamedinskiy, Sokulukskiy, Moscow, Kalininskiy and Panfilovskiy rayons are experiencing great difficulties in carrying out waterings of their grain crops.

In conformity with decisions handed down during the October (1984) Plenum of the CPSU Central Committee and the November (1984) Plenum of the Central Committee of the Communist Party of Kirghizia, the republic's Ministry of Land Reclamation and Water Management must devote a great amount of attention to improving the degree of water availability for existing irrigated lands. As is known, tremendous volumes of irrigation water are lost during the winter months. The accumulation of this water would make it possible to avoid the substantial difficulties being encountered in the irrigation of grain and forage crops.

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DECEMBER WEATHER CONDITIONS IN KIRGHIZ SSR DESCRIBED

Frunze SOVETSKAYA KIRGIZIYA in Russian 20 Dec 84 p 4

Article by D. Karpykova, deputy chief of hydrometeorological center:
"Siberian Cold in Kirghizia"/

Text The calendar winter in Kirghizia began with cold and snowy weather. Snow fell almost daily during the first 10 days in December. In Osh and Naryn oblasts and in the Chu River Valley, the total amount of precipitation during the first 10 days in December alone reached the monthly norm and in some regions it even exceeded it by a factor of 1.5-2. A snow cover had already formed by 1 December -- earlier than usual for the Chu and Talas river valleys by 1-2 weeks and in Osh Oblast -- by 2-3 weeks. Snow presently covers almost the entire territory of Kirgizia, with only the western and central portions of the Issyk Kul Basin being without snow. The snow for this period is unusually high for Osh Oblast -- its height being greater than the norm by a factor of 2-3 and in some areas by a factor of 5-7. The snow cover is higher than usual by a factor of 1.5-3 in regions of republic subordination and in Talas and Naryn oblasts.

December this year is characterized by very cold weather. Compared to the first 10 days when the average air temperature was lower than the norm by 4-8 degrees only in Talas and Osh oblasts and in regions of republic subordination, since 12 December unusually cold weather has prevailed over the entire territory of Kirghizia. The average daily air temperature from 15 to 17 December was lower than the norm in the Chu, Talas and Susamyr river valleys, in the farming zone of Osh Oblast and in the Kenes-Anarkhay region by 13-22 degrees, in the farming zone of Naryn Oblast by 10-12 degrees and on the remaining territory by 4-10 degrees. During this period the cold increased in intensity in Naryn Oblast during the night to 33-36, in the Tyan'-Shan' region to 42-45, in the Chu, Talas river valleys at night to 23-28 (in Sokulukskiy and Kirovskiy rayons -- 32-34) and during the day to 18-23 degrees of frost. This is the first time in the past 50 years that such a prolonged period of cold weather has been observed during the first half of December in the Chu and Talas river valleys. What caused this cold snap to occur? At the beginning of the second 10-day period in December, the direction of the flow of air currents in the troposphere changed from west to east and this promoted the movement of arctic air masses onto the territory of Kazakhstan and Kirgizia. A siberian anticyclone on the earth's surface, which formed within the arctic air mass, began to occupy almost the entire asiatic continent, becoming

stronger with each passing day. This powerful mass of cold air, which hovered over western Siberia, hindered the movement of warm tropical air masses onto the territory of Kirgizia.

Meridional circulation (direction of air currents from north to south) in the troposphere continues over the asiatic portion of the union and on 19-21 december the next portion of the cold air masses from the Arctic Basin will invade the regions of Kirgizia. This will bring about a further intensification in the cold weather in the Chu and Talas river valleys and in the Kenes-Anarkhay region during the night to 20-25 degrees of cold and during the day to 18-23, in Osh Oblast at night to 20-25 and during the day to 5-10 degrees of cold. On distant pastures the cold will reach 33-38 degrees at night and in the Ak-Saysk, Arpin and Susamyr river valleys -- 43-49 degrees of cold.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

UDC 632.79:633.11

MEASURES FOR COMBATING LOSSES CAUSED BY GRAIN SAWFLIES

Moscow ZASHCHITA RASTENIY in Russian No 12, Dec 84 p 40

Article by D.V. Koshul'ko, chief of the Adamovka Plant Protection Station:
"Black Grain Sawfly"/

Text A great amount of damage is inflicted upon spring wheat and barley in those areas where stem grain sawflies develop on an extensive scale. The black grain sawfly causes damage in Adamovskiy Rayon in Orenburg Oblast. Since the virgin land was first developed, this pest was observed on an extensive scale during the 1963-1966 period. In particular, there were large numbers of the pest in 1965: of 50,000 hectares of spring wheat sowings that were inspected, 44,000 hectares turned out to be colonized by the pest and with damage occurring to from 3 to 40 percent of the stems. In 1967, a sharp decline in the number of pests commenced -- individual stems were infested (maximum of 0.5 percent). Thereafter, over a period of 10 years (1967-1977) no more than 5 percent of the plants were damaged and commencing in 1977 the numbers of the pest once again began steadily to climb. In 1983, for example, up to 20-34 percent of the stems on some spring wheat fields were infested, the density of the populations reached 40-70 specimens per square meter and from 0.5 to 2.5 percent of the stems on barley sowings were damaged.

Following an analysis of the climatic conditions over a 20 year period and a comparison of the soil cultivation systems, the station's specialists drew the following conclusions. Favorable climatic conditions, which occur over a period of 3 or more years in a row during the autumn-winter periods, are the principal cause of the mass development of the black stem sawfly in our zone. An adequate amount of snow cover (more than 9 centimeters) which accumulated since autumn and moderately low temperatures (to minus 17°) ensure good wintering conditions for the pest and rapid growth in its numbers. Thus, the unusually early, cold and snowless (height of cover 2-7 centimeters) winter of 1966/67 (temperatures lower than 20° occurred in December) brought about a sharp decline in the number of sawflies during 1966-1967.

A sharply different soil cultivation system was employed in the rayon during the periods of the first and second flare-ups of the sawfly (see Table 1).

In 1983 the station's specialists carried out a check on the amount of damage inflicted by the grain sawfly on the Saratovskaya 42 spring wheat variety at the Zarya Kommunizma Sovkhoz (see Table 2).

TABLE 1

Год (2)	(1) Способ обработки почвы (%)					
	Отвал- ная забро- ска земли- ем	без- отваль- ной засып- ки	шлоско- режущая обра- ботка	повер- хност- ная об- работка	пар	(7)
(3)	(4)	(5)	(6)			
1965	98,0	—	—	1	1	
1970	44,0	39,0	11,0	18,4	—	
1976	11,0	—	58,0	24	9	
1980	8,0	13,0	34,0	40	4,0	
1983	8,8	1,9	37,5	24,8	9,2	

Key:

- | | |
|--------------------------------|------------------------|
| 1. Soil cultivation method (%) | 5. Sweep cultivation |
| 2. Year | 6. Surface cultivation |
| 3. Mouldboard autumn plowing | 7. Fallow |
| 4. Non-mouldboard plowing | |

TABLE 2

№ поля (1)	Предшественник яровой пшеницы (2)	Колич- ство стеб- лей, повре- ждённых жуками- ков (шт./м ²) (3)	Повреж- дённость растений (%) (4)	Масса зерна с одного колоса (г) (5)		Потери веса зерна (%) (8)
				здорового (6)	поврежде- нного (7)	
I.	Пар (10)	53	36	0,813	0,745	8,4
III.	Ячмень (11)	66	34	0,704	0,561	20,4
V.	Яровая пшеница (12)	43	20	0,725	0,630	13,2
I.	Яровая пшеница	23	10	0,698	0,608	11,4
Среднее (9)		22,9		0,732	0,638	18,3

Key:

- | | |
|---|-------------------------------|
| 1. Field number | 6. Healthy grain |
| 2. Predecessor arrangement for
spring wheat | 7. Damaged grain |
| 3. Number of stalks damaged by the
sawfly (units per square meter) | 8. Losses in grain weight (%) |
| 4. Damage to plants (%) | 9. Average |
| 5. Weight of grain per ear (grams) | 10. Fallow |
| | 11. Barley |
| | 12. Spring wheat |

Observations have shown that the principal crop losses occur not as a result of a reduction in grain weight on plants damaged by the sawfly, but rather as a result of the stalks which are cut off and which fall to the ground not being picked up during the harvest work. When from 10 to 30 percent of the stalks are infested, the grain loss amounts to 1.5-3.5 quintals per hectare. The size of a crop loss is dependent upon which portion falls to the ground prior to the harvest.

In 1983, owing to a lack of growth and sparseness in the plantings, the main tracts of wheat in the rayon were harvested by means of direct combining. Prior to this time, a large portion of the stalks damaged by the sawfly had fallen to the ground and thus following the principal harvest operation the stalks had to be raked up on the more contaminated sectors and additional threshing carried out.

Appropriate preventive measures have been undertaken this year aimed at reducing the losses being caused by this pest on the farms. The areas for durum varieties of spring wheat have been expanded since these varieties are less susceptible to damage. Optimum conditions have been created for the growth and development of the grain crops: fertilizers have been applied, appropriate soil preparation work was carried out, the preceding crops in the crop rotation plan were taken into account and a timely campaign against weeds was organized. Two-stage harvesting work was carried out at a very early date on tracts which had sustained severe damage. All of these steps made it possible to lower the crop losses caused by the grain sawfly.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

SEED SITUATION IN MOLDAVIA REVIEWED

Kishinev SEL'SKOYE KHOZYAYSTVO MOLDAVII in Russian No 2, Feb 85 pp 28-29

[Article by I. K. Laykov, director of the Moldavian SSR State Seed Inspectorate of the MSSR MSKh [Ministry of Agriculture]: "What We Sow....We Need Choice Seed for a Good Harvest"]

[Text] The time for spring sowing is near. How have the republic's enterprises prepared for it? How did seed farmers work in 1984? The editors have asked the Director of the Moldavian SSR State Seed Inspectorate of MSSR MSKh, I. K. Laykov, to analyze the situation.

As of the end of the year the plan for stockpiling spring crop^s seed was fulfilled by 152 percent, including of grains and legumes--by 160 percent. All the seed is conditioned. Ninety seven percent of the examined seed is first and second class; of grains and legumes--99 percent, including 100 percent of pea seed. Considering the fact that during the first quarter of 1985 the republic's elite-seed farms will supply enterprises with a large quantity of first-class seed alone, on the whole the opportunity exists to sow primarily first-class seed in the spring. All that is necessary is to carry out an inter-enterprise exchange.

The seed farmers of enterprises in Vulkaneshtskiy, Drokiyevskiy, Yedinetskiy, Kantemirskiy, Kriulyanskiy, Novoanenskiy, Slobodzeyskiy, Teleneshtskiy and Chadyr-Lungskiy rayons have worked well. They have supplied themselves with first-class seed at 100 percent of the plan and more.

The enterprises of the MSSR Ministry of Agriculture have also been supplied with first-class spring-crop seed at 104 percent of the quota, not counting the elite seed from the ministry's elite-seed farming enterprises which has already been procured for seed farms but has not yet been sold.

The enterprises of the MSSR Ministry of Viticulture and Winemaking, the Ministry of the Food Industry, the Ministry of the Fruit and Vegetable Industry, of the APO [Agro-Industrial Association] of the MSSR Essential Oil Industry and MSSR Tobacco Industry have improved their positions this year as regards the production, stockpiling and quality of seed.

Quotas were dealt with well by rayons cultivating hybrid sunflower and hybrid corn seed, which for the first time produced 76,000 tons of seed corn (as compared to the planned 60,000) and almost 10,000 tons of hybrid sunflower seed (as compared to the planned 10,000 tons).

Enterprises cultivating the seed of sugar beets overfulfilled their plans.

All of the seed that was raised was put into dependable storage facilities.

The cultivation of seed of the sunflower hybrids, Sanbred-154 and Soldor-220, was a new and complicated task for the seed farmers of the southern rayons. Crop rotations were reorganized in the shortest possible time to accomodate the cultivation of hybrid sunflower seed.

Since the sunflower plant is characterized by cross-pollination and since it needed spatial isolation, in these rayons it was necessary to eliminate the usual sunflower crop stands and wild sunflowers in order to avoid biological contamination.

Specialists of rayon state inspectorates became the controllers and organizers of work on hybridization plots. Work on these plots was especially well organized by the Director of the Chadyr-Lungskaya State Seed Inspectorate, F. B. Leon, of the Vulkaneshtskaya Inspectorate, A. M. Semenov, and of the Kagul'skaya Inspectorate, Zh. M. Peresada, and others.

This year hybrid sunflower seed produced by Moldavian seed farmers will be used to sow over 1.5 million hectares in the country, or about 40 percent of the total area. This has never before been seen in the practice of seed farming either in our country or abroad.

Alongside adequate results in seed farming, some rayons do not give adequate attention to the procurement and preparation of better-conditioned seed. Thus, in the enterprises of Kotovskiy Rayon only 13 percent of the examined seed was prepared according to first class standards, in Rybnitskiy Rayon--7.2 percent, Leovskiy--21.3, Kutuzovskiy--36, Nisporenskiy--17, Faleshtskiy--23.6 and Dubossarskiy Rayon--30.7 percent and in the enterprises of the Ministry of the Food Industry--13.7 percent. These were the results even with the availability of a sufficient quantity of milled seed material. The reasons for such result's include errors in selecting the schedule for harvesting seed plots of crops such as peas and a lack of adherence to a technology for chemical disinfection of seed to eliminate the pea weevil and other pests.

Perennial grasses occupy a special place in the feed balance here. Seed farmers have fulfilled the plan for stockpiling perennial-grass seed by 106.5 percent and have brought 89 percent of seed up to sowing condition.

Drokiyevskiy, Yedinetskiy and Ungenskiy rayons have supplied themselves with the seed of perennial grasses by 120 percent and more. Moreover, all of the seed is conditioned and of good quality.

In addition to seed farmers, the workers of republic, rayon, and city state inspectorates participate most directly locally in the cultivation, harvesting, stockpiling, preparation and storage of seed and planting materials.

This is the essence of the active form of seed control which as of now has been introduced only in Moldavia.

Included in the active form of control is the selection of samples for analysis. A representative of the enterprise participates in this work and is allowed to do so in accordance with a decision of the rayon executive committee of the soviet of workers' deputies.

The introduction of mandatory examinations of all seed and planting materials brought in from other enterprises, rayons and republics has increased responsibility for evaluating the quality of materials and for the reliability of the documentation that is issued.

When discussing seed and planting materials for field crops (beets, potatoes and others) we must also mention that in a number of places there are cases in which seed varieties were sown which had not been tested under specific soil-climatic conditions. As a result, productivity was low and there was an underproduction of products.

We already have the necessary selection of varieties and hybrids of all crops which have undergone testing in the state variety testing network as well as in production. This seed is characterized by a high level of productivity and by good-quality products. For this reason, there is no need to knowingly cultivate varieties with uncertain characteristics on large areas of land.

Complete clarity and order must exist in seed farming's position on quality. This means that our enterprises must adhere to the rules--to sowing the best regionalized and tested varieties and hybrids under given soil-climatic conditions.

But having seed of the best varieties and hybrids still is not everything. It is necessary that seed farming, seed science and intra-enterprise and state controls over variety and sowing qualities of seed, over variety renewal and over quality seed be carried out in all enterprises only according to a strictly-developed plan in order that seed material, as state property, be used only according to its stated purpose, i.e. in no other way than as seed.

Unfortunately, in addition to well-organized seed farming today some are going along with primitivism in this matter.

First of all, in a number of rayons rayon seed farms are not functioning as required. Some exist only in orders and resolutions and have not been consolidated organizationally or materially; as a result of this, seed farming is dispersed throughout all of the region's enterprises. Examples of such seed farming can be found in Rezinskiy, Sholdaneshtskiy and other rayons. Rayon seed farms are all subordinate to their kolkhoz councils and the seed that is produced is sold only to kolkhozes and sovkhozes and sovkhoz-plants of other ministries and departments are forced to produce seed in their own enterprises under conditions that are less suitable for this purpose.

Secondly, seed farming must be carried out on an industrial basis; it requires both specialization and concentration in places where the best soil conditions exist for this purpose. In the republic the enterprises of the agricultural ministry, the kolkhoz council and the ministry of the fruit and vegetable industry are best suited for the work of seed farming. The enterprises of other ministries and departments cannot carry out industrial seed farming at the necessary level because of their specializations and because of the absence of land for this.

Thirdly, it is necessary that rayon and specialized seed farms be conclusively authorized in places where they do not yet exist or are not yet operating. They must be reinforced with cadres of seed farmers and must begin working according to the plan. It is they which must deal with supplying seed to all enterprises in every rayon regardless of affiliation.

Under such conditions questions of improving seed farming will be dealt with correctly; the loss of seed, especially of deficit and promising varieties, will decrease; and seed farming as a whole will improve.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

PROGRESS, PROBLEMS IN SEED PREPARATION IN MOLDAVIA

Kishinev SOVETSKAYA MOLDAVIYA in Russian 13 Mar 85 p 4

[Article by I. Laykov, director of the Moldavian SSR Gosseminspektsiya [State Seed Inspectorate], Meritorious Agronomist of the MSSR and Hero of Socialist Labor: "Both Quantity and Quality"]

[Text] We know that without high-quality seed of the best regionalized varieties it is impossible to produce a good harvest. This is why concern for developing full-value seed funds is one of the most important for procurement organizations, directors and specialists of enterprises and state seed inspectorates.

Last year measures were taken to cultivate and procure the necessary amount of sowing material for the final year of the five-year plan. Winter crops have been sown in all enterprises of the republic primarily with first and second class seed, and in Yedinetskiy and Kriulyanskiy rayons--only with first class seed.

Considerable work was done on the timely harvesting and stockpiling of seed for spring crops. As a result, the republic's kolkhozes, sovkhozes and interfarm enterprises have been supplied by conditioned seed in the amount of 161 percent of the plan; of this quantity first class seed comprises 100 percent of the plan. The quality of seed material will also be improved by the purchase of elite seed so that spring sowing, especially of grain and legume crops, will be carried out using first-class material only. In the time remaining in rayons there should be an exchange of seed among enterprises; the import of elite and other high-quality seed from elite-seed farms and state resources in accordance with the plan for variety renewal and variety replacement should be accelerated.

A considerable amount was done last year to cultivate seed of hybrid sunflowers in Vulkaneshtskiy, Kagul'skiy, Komratskiy, Tarakliyskiy and Chadyr-Lungskiy rayons. The plan for the harvesting of oil-bearing seed of hybrids Sanbred-254 and Soldcr-220 has been carried out; this has provided the opportunity to fully satisfy the needs of the republic's enterprises for them and to send a portion into other regions of the country.

Plans for the production of seed of hybrid corn, sugar beets and perennial grasses have also been overfulfilled.

Thus on the whole the republic is fully supplied with sowing material, which to a considerable degree is to the credit of workers of rayon, city and republic state seed inspectorates. Together with seed farmers they participated most directly locally in cultivating, harvesting, storing, preparing and storing seed and planting materials, in approving crop stands and in carrying out documentation on varieties.

This is the essence of the basic link in the active form of seed control which so far has been introduced only in our republic. This work is particularly well-organized in the inspectorates of Chadyr-Lungskiy, Yedinetskiy, Drokivetskiy and a number of other rayons. But in Suvorovskaya, Kaushanskaya and Sholdaneshetskaya state seed inspectorates not everything has been done yet to introduce this form, whereas it must encompass all of the main stages of production and control over the quality of seed, beginning with its cultivation and ending with the selection of samples and with the reexamination of seed funds brought into the enterprises.

There are also some enterprises in which the situation leaves something to be desired. Only insufficient attention to seed farming can explain the fact that in Kotovskiy, Komratskiy, Rybnitskiy and Leovskiy rayons only 37-62 percent of the available amount of spring-crop seed has been prepared to meet first-class standards. In the enterprises of Kamenskiy, Suvorovskiy and Slobodzeyskiy rayons a portion of alfalfa, sunflower, peas and soybean seed is unconditioned in terms of moisture and cleanliness.

Unfortunately, there are serious violations in the work organization of seed-farming enterprises. In Strashenskiy, Rezinskiy, Sholdaneshetskiy and a number of other rayons they are not altogether fulfilling their functions, which include reproducing regionalized, promising and deficit varieties and hybrids for all enterprises. As a result, the enterprises here are forced to produce seed material independently. This worsens the situation and affects the productivity of crops. Yet many seed-farming enterprises have a good material-technical base and are capable of producing high-quality seed material, but do not do so (in particular, the Kolkhoz imeni Dimitrov of Kutuzovskiy Rayon).

Seed is rightfully referred to as the harvest's golden fund. For this reason, in the days remaining until the beginning of sowing operations we must take effective measures to make sure that all of the republic's kolkhozes and sovkhozes are supplied with high-quality varieties of seed and planting material.

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CSO: 1824/357

MAJOR CROP PROGRESS AND WEATHER REPORTING

FIELD WORK PROGRESS IN MOLDAVIAN SSR

Kishinev SOVETSKAYA MOLDAVIYA in Russian 7 Apr 85 p 3

[Article by Gibrid NPO [Scientific-Production Association] of MSSR Minsel'khoz [Ministry of Agriculture]: "With a Consideration of Existing Conditions"]

[Text] The fulfillment of the goals for the current year and for the five-year plan as a whole with regard to grain production will depend greatly on the contribution that is made by the republic's corn farmers. In order to fulfill their task they must mobilize all resources, carry out field work in an organized manner and adhere to technological discipline in all operations. Here there must be a careful consideration of the characteristics of weather conditions for this winter and spring.

Despite abundant snowfall, due to the dry fall and deep freezing of the soil moisture reserves did not reach average long-term levels in many regions. In connection with this, all agrotechnical measures must be made subordinate to one of our most important tasks--to preserve and economize on the use of moisture. This can be achieved by carrying out all presowing operations only after the soil reaches physical maturity. It should be kept in mind that superfluous operations will strengthen the evaporation of water from the sowing layer. This is why it is expedient not to bring units out to fields leveled in the fall until the time for sowing has arrived. For spring levelling of soil it is recommended that heavy tooth harrows, cultivators in units with them and BP-8 spring harrows be used. In selecting units it is possible to avoid excessive packing of the soil by utilizing caterpillar tractors primarily.

Fertilizers will provide large harvests of grain and silage mass. On each hectare of crops 90-120 kilograms of nitrogen, 60 kilograms of phosphorus and 45-60 kilograms of potassium should be applied as active substance. On fields which did not receive fertilizer in the fall, 2.5-3 quintals of ammonium nitrate or 2 quintals of urea must be applied per hectare during pre-sowing cultivation. Phosphorus fertilizers--1 quintal of superphosphate or 0.5 quintals of ammophos--should be applied along the rows during sowing. On irrigated lands the dose of nitrogen fertilizer must be increased to 160-180 kilograms of active substance per hectare. A portion of this quantity of nitrogen can be applied with the help of a hydraulic feeder in the course of vegetative irrigation.

Due to extended drought in the fall, especially in the southern and central regions, the seed of weeds has been preserved well in the soil. There is reason to expect mass growth of weeds, which will require additional efforts to combat them. This work must be given maximal attention.

There are sufficient quantities of allocated herbicides to cultivate all seed corn. The main herbicides will be eradikan and its analog aliroks, which should be applied at the rate of 7 liters per hectare. In order to strengthen the action of these herbicides we can add 1.5-4 kilograms of atrazin per hectare depending upon which crops follow corn. Of the other soil herbicides we can utilize protrazin (analog of agelon), lasso-atrazin, lasso and primekstra at a rate of 4-6, 7, 6 and 5-6 liters per hectare respectively. Lasso, lasso-atrazin and primekstra preparations prove themselves best on irrigated corn crops. On seed plots only eradikan and aliroks preparation should be used. However, the aforementioned herbicides do not destroy all types of weeds, and for their more complete suppression pre-shoot harrowing should be carried out 4-5 days after sowing.

If some of the grass weeds remain after corn shoots appear the weeds can be destroyed by using a preparation of mayazin at a rate of 5 liters per hectare during the time when weeds have no more than 2-3 leaves. The herbicide 2.4 DA (2.5 liters per hectare) is effective in combatting sunflower fallen flower, field mustard and other dicotyledonous weeds when corn is in the phase of 3-5 leaves. Instead of 2.4 DA, Dialen-40 should be used against thistle.

This year a new combination post-shoot formation herbicide, fenoksazin, has appeared (1 liter of preparation contains 320 grams of active atrazin and 110 grams of 2.4 D). With a dosage of 2.5 liters per hectare it is used according to the same schedule as 2.4 DA. In tests by the Moldavian NIIKS [Further expansion unknown], the consistent use of eradikan prior to sowing and of fenoksazin during the phase of 3-5 leaves was very effective. If not all weeds are dealt with successfully, mechanical treatment is indicated.

Fields infested with old withch grass must be sown last in order to enable eradikan to destroy the first wave of weeds more fully. Because eradikan eliminates this malicious weed only partially we must carry out mechanical operations in addition to preshoot harvesting--harrowing after shoot formation and interrow cultivation. Taking these circumstances into account, the emergency seed reserve should be increased by 25-30 percent. Silage corn crops also require a careful battle against weeds.

Because funds of soil herbicides are limited, emphasis must be placed on mechanical cultivation, which must be carried out to its full degree--harrowing pre- and post-shoot formation and interrow cultivation with attachments for destroying weeds in rows. During the phase of 3-5 leaves crops should be sprayed with fenoksazin (2.5 liters per hectare) or with a tank mixture of this preparation--5 liters of mayazin and 2-2.5 liters of 2.4 DA per hectare.

The presence of the recommended number of plants on every hectare and their equal distribution over area are essential conditions for producing large corn

harvests. This depends on the careful regulation of sowing units and on the systematic control of operations performed by sowers. To protect corn shoots from weevils and other leaf-gnawing pests emulsions of metaphos or hexachlorine are used; to combat the corn stem moth corn crops are colonized with trichogramma.

The precise fulfillment of all technological operations with a consideration of the situation developing on every field and controls over the quality of work will enable us to raise a full-value corn harvest during the final year of the five-year plan.

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CSO: 1824/342

FIELD WORK PROGRESS UNDER DELAYED SPRING CONDITIONS

Moscow SEL'SKAYA ZHIZN' in Russian 16 Aug 85 p 1

[Untitled article by Yu. Maksimenko, Rostov Oblast]

[Excerpts] The special characteristics of this year's delayed spring have forced enterprises to prepare more carefully for the care of winter crops and their top-dressing, to increase the sowing rate of barley and to increase the doses of fertilizer for wheat, barley and corn in order to avoid a decrease in the grain harvest. A great deal of attention is being given to grain crops that are being cultivated according to intensive technology in Sal'skiy, Yegorlyyskiy and Neklinovskiy rayons.

With the energetic cooperation of the RAPO [Rayon Agro-Industrial Association], Zernograd enterprises and their partners mobilized material reserves and labor resources to carry out crop care and spring sowing in the optimal period of time and with good quality, with the goals of increasing gross grain yield to 430,000 tons this year and of fulfilling the grain sales plan, including the stockpiling of up to 50,000 tons of strong and valuable wheats. A broad complex of agrotechnical measures is being employed on fields in order to obtain large and stable harvests. Following the example of farmers from Kolkhoz imeni Lenin and Manychskiy Sovkhoz, enterprise specialists and machine operators equipped sowing and soil-cultivation units with attachments to carry out field work according to a moisture-conservation technology.

This spring oblast enterprises must sow, with a consideration of the "repair" and resowing of winter crops, 1.9 million hectares of early spring crops and carry out an entire complex of agricultural techniques on 300,000 hectares of winter wheat that was cultivated according to intensive technology.

Work is increasing in pace with each passing hour. The type of harvest we have this year depends on the energy and organization of collectives of grain farmers and of their directors and on their ability to adhere to technological discipline during spring sowing. Much remains to be done to raise the agrotechnical level of fields in Verkhnedonskiy, Bokovskiy, Kasharskiy, Milyutinskiy and Oblivskiy rayons, where the quality of soil cultivation still remains low and where some directors and specialists exhibit outmoded ideas about technological discipline in farming.

During the current five-year plan Rostov Oblast decreased grain production and has not been able to fulfill plans on grain sales to the state or on the procurement of strong wheats. The efforts of party organizations, rayon agro-industrial associations and labor collectives of kolkhozes and sovkhozes and their service enterprises and organizations are directed today at eliminating lags. Within production links of the agro-industrial complex the demand for agrotechnology and technological discipline on grain and feed fields has become stricter. Following progressive examples, enterprises are introducing systems for controlling the quality of field work, for collective contracts and for intensive technology in crop cultivation.

As the practical experience of master farmers assures, the path toward stable, large harvests lies in concern about every field and in every APK [Agro-Industrial Complex] worker's creative attitude toward his job.

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CSO: 1824/337

MAJOR CROP PROGRESS AND WEATHER REPORTING

FIELD WORK PROGRESS IN ROSTOV OBLAST

Moscow SOVETSKAYA ROSSIYA in Russian 20 Apr 85 p 1

[Article by V. Ogurtsov, Rostov Oblast: "The Field Hurries Us"]

[Text] Spring arrived almost a month late in Rostov Oblast.

"The value of a minute of work has increased sharply," says V. Voronin, First Secretary of the Zernogradskiy Rayon Party Committee and Hero of Socialist Labor. "Everyone must triple his efforts in order to compensate for omissions. All party committee work is now directed at this."

Conditions for winter crops are favorable. They were covered with snow and received sufficient moisture. There is a total of 50,000 hectares in winter crops. Weak shoots have already been top-dressed; frozen shoots have been replaced by barley and peas. It has also been decided to more than double the area of corn cultivated according to industrial technology. There is a sufficient quantity of fertilizer, fertilizer and herbicides are also available and equipment has been adjusted. In other words, we are trying to fulfill our obligations to produce an average of 37 quintals of grain per hectare.

In Tselinskiy Rayon winter crops suffered more although weather conditions were the same as in Zernogradskiy Rayon.

Right now winter crops must be immediately replaced, but seed is not available everywhere to do this. In my presence the chairman of Kolkhoz imeni Michurin, G. Vedenev, phoned the senior agronomist of the rayon agricultural administration, I. Kovsharov.

"What should we do?"

Kovsharov calmed him down by saying that they will seek seed out and request it from neighbors. Evidently the rayon agricultural administration and RAPO [Rayon Agro-Industrial Association] council gave no thought ahead of time as to what to do in such a case.

"Rainfall spoiled all our plans and we cannot carry out any fieldwork," say the workers of the rayon agricultural administration as they try to steer the conversation away from an uncomfortable subject.

At this moment we see through the window a regular take-off of an Annushka. Aviators are top-dressing winter crops in Tselinskiy Sovkhoz. Here the value of liquid complex fertilizers was understood long ago and a storehouse near the railroad as well as an all-weather runway were built. However, in the majority of other enterprises in the rayon there are no such runways and there airplanes await good weather just the way sowing equipment does.

Neighboring Sal'skiy Rayon has had a similar experience. By utilizing agricultural aviation, Gigant, Severnyy, Sandatovskiy, Yuzhnnyy and other sovkhozes were able to apply nitrogen fertilizer to many thousands of hectares of winter wheat despite the bad weather!

The late spring forces us to make many technological corrections. It examines all links of agricultural production for perfection. Above all, it tests the agronomist's ability to adapt himself to any circumstance. Let's say that right now it is important to find ways to curtail idleness of units in the fields due to the bad weather. In Sal'skiy Rayon such ways have been found. Unfortunately, not everyone burdens himself with such a search or utilizes well-known innovations and experience.

Meanwhile, time is passing and every hour of delay brings losses to the future harvest.

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FIELD WORK PROGRESS IN DZHAMBUL OBLAST

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 5 Apr 85 p 1

[Article: "Concentrating the Work Schedule"]

[Text] Spring field work is being carried out in oblast enterprises. A late spring has compressed the schedule for completing it. Harrowing of soil, sowing of spring crops and top-dressing of winter crops are being carried out simultaneously in kolkhozes and sovkhozes.

All machine operators are overfulfilling norms related to the sowing of grains in Kolkhoz imeni Sverdlov of Sverdlovskiy Rayon. Because of the late spring, tractors, sowers and mobile shops have been organized into large detachments here in order to accelerate work. Production servicing of equipment has improved; in comparison to last year output per unit is significantly higher.

A severe and long winter delayed sowing by a month. But grain farmers utilized their time in a business-like manner--equipment was repaired with high quality and snow retention was carried out on many fields. The soil has a good moisture content.

Sowers have been equipped with attachments for applying mineral fertilizers in the rows. It has been decided to compress the sowing period everywhere. In the majority of enterprises two-shift work by machine operators has been introduced and broad units are being utilized. In Kurdayskiy, Dzhambulskiy and Talasskiy rayons it is planned to sow grains in 5 days.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

FIELD PROGRESS IN CHIMKENT OBLAST

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 2 Apr 85 p 1

[Article by Yu. Livinskiy, Chimkent Oblast: "The Sowing Front is Expanding"]

[Text] Field work is already in full swing in the oblast's kolkhozes and sovkhozes. It is true that unstable weather conditions are hindering the pace somewhat, but farmers are striving to utilize days with good weather as well as possible and to work to capacity during this responsible period.

The enterprises of Chardarinskiy Rayon are carrying out spring field work in a shock manner. They are already completing the sowing of spring spike crops. The farmers of Sayramskiy, Bugunskiy, Turkestanskiy and a number of other rayons are maintaining a high pace during sowing operations.

In the oblast this year's sowing operations are being carried out with particular intensity. The fact is that this winter winter crops perished on significant areas and must now be resown. This has required the additional mobilization of manpower and technology.

This year in the oblast it is planned to expand the area of the valuable alfalfa crop. It is to be sown on almost 100,000 hectares. It has already been sown on over one-third of the planned area. The enterprises of Chardarinskiy Rayon were first to meet plan quotas. Sowing of alfalfa is proceeding ahead of schedule in Kelesskiy, Kirovskiy and Kzylkumskiy rayons.

Vegetable farmers are also faced with an intensive work period. Specialized enterprises are beginning to plant early vegetables. The work pace is being set by the masters of vegetable plantations in Saryagachskiy and Sayramskiy rayons.

A large volume of work is to be carried out by Chimkent farmers and they have every intention to complete it in a compressed period of time and with excellent quality in order to lay a stable foundation for the harvest of the last year of the five-year plan.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

FIELD PROGRESS IN ALMA-ATA, TALDY-KURGAN OBLASTS

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 12 Apr 85 p 1

[Article by D. Gutenev, Alma-Ata and Taldy-Kurgan oblasts: "Spring in the Kerbulak"]

[Excerpts] Mass sowing of early spike crops is being carried out by the farmers of Alma-Ata and Taldy-Kurgan oblasts. Grain farmers have decided to do everything possible to cultivate a good harvest of grain crops in the final year of the five-year plan.

In the Kerbulak Massif both oblasts have over 70,000 hectares of grain fields. Usually spring work begins here before anywhere else.

"Our farmers' desire to produce a large harvest is understandable," says the chairman of the Kerbulak RAPO [Rayon Agro-Industrial Association], A. Bektemirov. "We have mobilized all forces for carrying out sowing in a compressed period of time. There are about 400 specialized units working in a complex in the fields right now."

This year as never before the region's enterprises are carrying out sowing operations in a coordinated manner. All technological operations have been maximally mechanized. Sowing units are working with markers, which improves the quality of seed placement. Seed loading is mechanized. Prior to the movement into the fields the shortage of tractor storage cells gave rise to alarm. But the cleverness of machine operators helped out. The Kirovets tractors were set in motion by starters. According to a RAPO decision, technical service links from raysel'khoztekhnika [Rayon Agricultural Equipment Association] were sent to four enterprises. The RAPO council managed to deal with seed preparations in a timely manner as well.

Farmers are thinking now not only about grain. The past wintering period showed how important it is to have a feed reserve. This is why the area in grasses is now being expanded.

It is difficult, of course, to guess now what type of harvest we will have. But people are doing everything possible to produce an abundant one.

BRIEFS

UTILIZING NEW TECHNOLOGY--The kolkhozes and sovkhozes of the Kuban' are allocating 480,000 hectares of winter fields for the final year of the five-year plan with the goal of cultivating them according to intensive technology. Farmers are counting on a significant increase in yield. Today winter wheat has yielded 54.3 quintals per hectare on semi-fallow and after sunflowers on fields where the new method was tested first. We were able to additionally thresh 9.6 quintals more per hectare than on control plots. The first results of introducing this technology satisfied the farmers of Kolkhoz imeni M. Gor'kiy of Tbilissi. On 90 hectares Partizanka and Olimpiya wheat varieties yielded 66.2 quintals of wheat utilizing a constant technological wheel width, whereas the rest of the fields produced 19 quintals less. As the new technology requires, grain farmers did everything possible to maintain the most favorable conditions for plant germination during the entire vegetative period. In accordance with data from the agrochemical examination of the soil and with the needs of winter crops, 355 kilograms of phosphorus fertilizer and 79 kilograms of potassium were applied per hectare during initial plowing. Nitrogen was applied in the rows during sowing and then in the form of top dressing; 240 kilograms of it were required. With the help of land equipment, an integrated system of protecting plants from diseases, pests and weeds was skilfully implemented. All of this was repaid by an excellent harvest. It is noteworthy that the cost of a quintal of grain cultivated in the new manner equalled 1 ruble 67 kopecks instead of 2 rubles 38 kopecks with regular agrotechnology. Now intensive crops are earmarked for 1,350 hectares of kolkhoz fields. This is 65 percent of the winter-crop fields. [Text] [Krasnodar SEL'SKIYE ZORI in Russian No 11, Nov 84 p 10] [COPYRIGHT: "Sel'skiye zori", 1984] 8228

WINTER CROP CARE--Krasnodar, 20 [Oct]--This year winter crops, the sowing of which is being completed, will occupy almost 1.7 million hectares. It is planned to raise wheat according to intensive technology on 480,000 hectares of this area. On these fields every hectare received 180-190 kilograms of nitrogen, phosphorus and potassium fertilizer in active substance during basic soil cultivation. Moreover, up to 50 kilograms were applied during sowing. All of this will enable us to increase productivity to 60 and more quintals per hectare, to raise the quality of grain and to sell the state more strong wheat. This year kray farmers produced 37.6 quintals of wheat per hectare, and the workers of many regions increased this indicator to 44-50 quintals. Now the goal is to secure that which has been achieved, or to significantly

surpass it on fields utilizing intensive technology. The rainfall which we have had everywhere has replenished moisture reserves in the soil well. In the kray's northern region, where sowing took place almost a month earlier than in the central and southern zones, even shoots have appeared. Top-dressing of crops is already beginning. Farmers intend to give special attention to care of winter crops. During the vegetative period all crops will be top-dressed additionally; enterprises will carry out a struggle against pests and plant diseases. [By Yu. Semenenko] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 21 Oct 84 p 1] 8228

FERTILIZER ON ERODED SOIL--In the Kuban' winter wheat is the leading crop and it is cultivated on an area of 1.6 million hectares. A significant portion of crops is located on eroded calcareous and slightly leached chernozems. The subject of fertilizing wheat on such soils has not been studied sufficiently. Thus, in Krasnodar Kray on slightly eroded calcareous chernozems winter wheat responds very well to phosphorus fertilizer, poorly to nitrogen and not at all to potassium fertilizer. This can be explained by the extremely low content of active phosphorus in the aforementioned soils as well as by their capability to mobilize large quantities of nitrated nitrogen in the course of the vegetative period. [By Candidate of Agricultural Sciences S. M. Tsygutkin (VIUA [All-Union Scientific Research Institute of Fertilizers and Soil Science])] [Excerpts] [Moscow KHIMIYA V SEL'SKOM KHOZYAYSTVE in Russian No 8, Aug 84 pp 24-25] [COPYRIGHT: Izdatel'stvo "Khimiya", "Khimiya v sel'skom khozyaystve", 1984] 8228

KUBAN' SOWING--Krasnodar--Sowing units are preparing the future grain harvest in the Kuban' steppe. The seed of spike crops has already been distributed on 500,000 hectares or almost one-third of winter-crop fields. In most kolkhozes and sovkhozes winter wheat is being sown according to intensive technology on significant areas. [Text] [Moscow TRUD in Russian 5 Oct 84 p 1] 8228

GRAINS SOWN IN KUBAN'--Krasnodar--In the Kuban' the sowing of winter crops has moved toward the southern valleys of the Caucasus. Here wheat and barley are sown later than in the northern and eastern parts of the kray. Now grains have been sown on 1 million hectares, or on over half of the area that has been earmarked for grain. Crews of sowing machines are sowing the new durum wheats, Kristall-2 and Korund, on significant areas for the first time. [Text] [Moscow TRUD in Russian 20 Oct 84 p 1] 8228

SNOW RETENTION IN SOUTH--Krasnodar--The beginning of spring in the Kuban' was marked by abundant snowfall and cold weather. Fields are covered with snow that is 20-40 centimeters deep. In order to retain the moisture, units of machine operators are forming snow windrows in the fields--a rare agricultural method for the southern kray. Orchard farmers are packing the snow around the tree trunks of fruit trees. Snow retention has been carried out on 1,000 hectares. [Text] [Moscow TRUD in Russian 3 Mar 85 p 1] 8228

TOP-DRESSING WINTER CROPS--Krasnodar, 22 [Mar] (TASS)--The southern sun melted the snow on Kuban' fields all at once. Valuing the spring day, enterprises have begun mass care for winter grains. The use of airplanes from agricultural aviation enables them to shorten the crop cultivation schedule. Special attention is being given to the top-dressing of winter wheat and barley cultivated according to intensive technology. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 23 Mar 85 p 1] 8228

FIELD WORK--In Ust'-Labinskiy Rayon of the Kuban' farmers have begun sowing early grains and legume crops on dry fields. At the same time, machine operators are applying complex mineral fertilizers to the soil. Work has been organized to divert and pump out water from depressed sections of land. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 31 Mar 85 p 1] 8228

SELECTIVE SOWING--Link leader A. G. Kavets has been working on the land for many years and produces good harvests. Last year he and his comrades harvested 43 quintals of peas per hectare. But this year's late spring is cause for alarm. The ground is still wet and cold. Every day Kavets went into the field and pressed the soil into his hand to see if it was ready. And now a few days ago he, together with brigade leader A. A. Sevost'yanov and the kolkhoz's senior agronomist, V. I. Shaposhnikov, decided that it was time to bring out the units. In Rossiya Kolkhoz of Ust'-Labinskiy Rayon the sowing of peas and oats is being carried out selectively. In 2 days peas were sown on the entire planned area. The farmers of Otradnenskiy, Novokubanskiy, Korenovskiy and other rayons of Krasnodar Kray sowed early spring crops on 120,000 hectares. Following on the heels of the Kuban', field work is beginning in the Dagestan, Kabardino-Balkar and North Osetian autonomous republics. [By N. Uvarov] [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 5 Apr 85 p 1] 8228

SOWING IN FULL SWING--Krasnodar Kray--In the foothill valleys of the Northern Caucasus and in all of the Kuban' steppe the time for sowing has arrived. Machine operators are working from dawn to dusk, and in places where it is drier--by the light of additional headlights. Barley, oats, peas and grasses already occupy 250,000 hectares. Equipment has also been brought out to the tilled fields--the sowing of sugar-beet seed has begun. Of special concern to machine operators is the repair of the winter field. Severe cold damaged winter grains on almost 500,000 hectares. They are being cultivated according to intensive technology, and units have been brought out on the tracks that have been set up through them to top-dress them with nitrogen fertilizer. In Kuban' Kolkhoz of Ust'-Labinskiy Rayon sprayers with a wide wing-span are being used. The partners of farmers through the agro-industrial complex have made a thousand such units for this season, using plant sprayers, but still there are not enough of them. Unfortunately, designers of enterprises of the ministry of tractor and agricultural machine building are remaining in the background and have shown no interest in the discoveries of village innovators. [By V. Kalishevskiy][Excerpts] [Moscow SOVETSKAYA ROSSIYA in Russian 7 Apr 85 p 1] 8228

COORDINATED WORK--Krasnodar Kray--The kray APO [Agro-Industrial Association] is striving to have all partners of farmers work precisely and in a coordinated manner for the sake of a common goal--a large harvest. It is no accident that this year there have been almost no complaints about a shortage of herbicides, fertilizers and poisonous chemicals. Order for deliveries of fuel and lubricants are being fulfilled more completely. With regard to this, the first deputy director of the kray agricultural administration, V. I. Svyatko, said the following: "More coordinated work among our partners has been dictated by life itself. This is also required by the special features of spring and by increased work volume. It is necessary to count the hours. Now we are completing the top-dressing of wheat and the "repair" of a portion of winter

crops." In the kray it is planned to sow spring crops on almost 2 million hectares. Machine operators have prepared equipment well and have introduced important improvements into the designs of a number of machines; their productivity and work quality are improving. In most kolkhozes and sovkhozes equipment operates at full capacity. Machine operators are striving to complete the entire complex of spring work as soon as possible. I returned to Krasnodar during the night. But on both sides of the road motors were humming as if it were daytime; the steppe was lit by the headlights of dozens of working tractors. [By Yu. Semenenko] [Excerpts] [Moscow SEL'SKAYA ZHIZN' in Russian 4 Apr 85 p 1] 8228

RIVER NAVIGATION BEGINS ANEW--Kishinev--Moldavian river workers have once again begun freight shipments. This winter for the first time in 50 years navigation was halted for 3 months on the Dnestr due to severe cold weather. Without waiting for the river to be clear of ice, powerful vessels laid out a 100-kilometer path on the lower reaches. Tugboats--pushing vessels delivered caravans of barges with building materials to Varnitsa, Tiraspol' and Slobodzeya along this route. This year it is planned to ship over 4 million tons of various types of freight--significantly more than last year--on the Dnestr and Prut. For the first time, Moldavian river workers are travelling to the Kama via the Belgorod-Dnestr seaport, the Sea of Azov and the Volga-Don canal. After delivering wastes from the production of building rock, used for soil deoxidation, to Perm Oblast they will take wood back to Moldavia. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 31 Mar 85 p 1] 8228

FLOOD CONTROL--Kishinev--The precise interaction of the Ukrainian and Moldavian flood control commissions helps to control the water elements of the Dnestr. A week before the predicted beginning of spring floods the discharge of water in line of the Dubossarskaya GES [Hydroelectric station] reached 400 cubic meters per second, exceeding the regular discharge rate by a factor of 2. However, this does not mean that the calculations of hydrometeorologists were incorrect. At the request of Moldavia's Minvodkhoz [Ministry of Water Management], an extra portion of water was released by the sluices of the Mogilev-Podol'sk Hydroelectric Station. The Dnestr is still covered by a half meter of ice, with ice jams threatening damage during high water. The powerful swell of water will break the armor of winter, and as it travels to the lower reaches of the river it will serve as a type of signal for the ice breakers of Odessa's steamship company, which will begin the penetration of the waterway. Crew work was eased by aviators who "traced" the ice with strips of coal dust, thereby accelerating its melting. At the present time in the republic over 1,000 kilometers of barrier dams and banks guard against water elements. Careful repairs during the fall-winter period enabled us to render them very stable, thus insuring against the unexpected to a large degree. On the upper reaches of the river, hydrotechnical structures have already passed reliability tests. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 24 Mar 85 p 1] 8228

TOP-DRESSING WINTER CROPS--Faleshtskiy Rayon--The severe, drawn-out winter alarmed many of the rayon's grain farmers. "How are the winter crops doing?" they asked. But the alarm turned out to be unnecessary. "Examinations carried out on the entire area of 12,000 hectares," says A. Nikulitsa, chairman of the rayon APK [Agro-industrial complex] council, "showed that the condition of crops on the whole is good. Now we must just provide them with full-weight top-dressing and we can confidently count on a large harvest." Top-dressing of winter crops with fertilizer began on a wide front. At first, when the soil was still frozen, regular land equipment was used for this. When the weather warmed up and the soil became unfrozen it became the turn of winged farmers--pilots of agricultural aviation. Three helicopters arrived in the rayon. They circled the fields, leaving behind a trail of fertilizers. Aviation workers are working harmoniously and conscientiously in an attempt to utilize all daylight hours. Daily output has been brought up to 300 hectares by the crew headed by pilot Vladimir Shevelev and technologist Petr Serebryan. Grain farmers of Faleshtskiy Rayon are grateful to other crews as well--to Yuriy Golubey and Viktor Burdilo and to Vladimir Radchenko and Nikolay Peschanskiy. Early spring top-dressing of winter crops will be carried out in a compressed period of time thanks to them. [Text] [Kishinev SOVETSKAYA MOLDAVIA in Russian 2 Apr 85 p 1] 8228

START OF SOWING--Sowing is beginning in the southernmost rayon of Moldavia--Vulkaneshtskiy. In the next day or two all 1,200 komsomol-youth crews will move into the republic's fields. Machine operators are impatient to go out into the fields. The arable land on the outskirts of the village, saturated with moisture, awaits man's participation for its age-old and new rejuvenation. Equipment repaired long ago is also awaiting the meeting with the field. [By V. Bantash, chairman of the interfarm association of mechanization and electrification of agricultural production, Ryshkanskiy Rayon, Moldavian SSR] [Excerpts] [Moscow KOMSOMOL'SKAYA PRAVDA in Russian 4 Apr 85 p 1] 8228

SNOW RETENTION--Moldavian farmers are carrying out snow retention at a rapid pace. Over 3,000 units are working in the fields. Now it is planned to carry out "white plowing" on an area of about half a million hectares. [Text] [Moscow TRUD in Russian 19 Jan 85 p 1] 8228

FIELD WORK CONTINUES--Having completed grain harvesting, farmers of Faleshtskiy Rayon have directed their efforts at carrying out regular agricultural work. Plowing detachments are increasing their work pace. Over 4,000 hectares have already been prepared for the sowing of winter crops. Land for sowing sugar beets is also being prepared in strict accordance with the requirements of progressive technology. [Text] [Kishinev SOVETSKAYA MOLDAVIYA in Russian 29 Aug 84 p 2] 8228

PROGRESSIVE CULTIVATION TECHNOLOGY--Moldavian SSR--The initiative of leading enterprises to produce more good-quality food grain from a smaller area on a guaranteed basis has found widespread support. The republic's kolkhoz council and agricultural ministry, together with Sel'khozkhimiya [Agricultural Equipment Association], have worked out and are implementing a number of measures on the agrochemical servicing of fields which employ intensive technologics. In some places there has been a simplification of the

approach to introducing industrial technology and cliches are tolerated. In order to eliminate these shortcomings we should strengthen explanatory and experimental work locally after recruiting leading specialists of research stations and scientific-research institutes for this. Today 140,000 hectares, or over half of the republic's wheat fields, will be occupied by crops that are cultivated according to progressive technology. Motors are already humming on fields of winter crops. Farmers are striving to do everything possible to lay a firm foundation for a large harvest next year. [By N. Marfin] [Excerpt] [Moscow SEL'SKAYA ZHIZN' in Russian 12 Sep 84 p 1] 8228

INTENSIVE PRODUCTION TECHNOLOGY--Mass sowing of winter crops is beginning on republic fields. Farmers are now introducing an intensive technology of grain production on over half of fields. Joint work by scientists from Seleksiya NPO [Scientific-Production Association] and farmers is facilitating the extensive use of this technology. They efficiently carried out the agrochemical examination of fields earmarked for winter wheat and composed the corresponding cartograms. By using these, machine operators top-dressed the fields with fertilizers immediately after harvesting predecessors. Phosphorus and potassium fertilizers were applied to carefully-prepared soil with the goal not only of making up for deficits but also of producing the planned harvest. Fields are top-dressed with nitrogen fertilizers simultaneously with sowing. Sowing units leave tracks for subsequent care of winter crops. Enterprises that are testing new equipment this year have produced 50 quintals of wheat per hectare. After extending the experiment, scientists and specialists developed individual technological maps for all "intensive" fields. They foresee a complex of ag.technical and other measures which will promote achieving a programmed harvest. Republic farmers intend to produce an average of 50 quintals of winter wheat per hectare next year, and from fields being cultivated according to intensive technology--65 quintals. [Text] [Kishinev SOVETSKAYA MOLDAVIA in Russian 25 Sep 84 p 1] 8228

FROST DAMAGE TO ORCHARDS--Kodru NPO [Scientific-Production Association]-- Unusually severe frost in our area during January and February had a certain negative effect on the wintering of fruit trees. The fact is that minus temperatures were below the critical level, reaching minus 28-29 degrees in the republic's north, minus 25-25 degrees in the center and minus 20-22 in the south. It is essential to note that the relatively good preparation of trees for wintering and the normal conclusion of the tempering process in the fall of 1984 decreased the negative effects of frost to a minimum. The 5-15 percent rate of destruction of blooms on pear and apple trees noted recently by the scientific workers of Kodru NPO of the Moldavian NII [Scientific Research Institute] of Fruit Growing gives us the right to assume that in general wintering is still proceeding normally. If the rest of the winter proceeds normally, this damage will not affect the size of the harvest. At the same time, in some orchards located in deep, cold ravines, on flood plains or hollows the amount of damage done to trees may be more significant. This is why we recommend that local specialists and brigade leaders themselves determine the nature of damage. The timely and quality trimming of apple and pear trees with a consideration of this winter's special features is one of the main prerequisites for obtaining large yields of these crops during the final year of the five-year plan. [Excerpts] [Kishinev SOVETSKAYA MOLDAVIYA in Russian 21 Feb 85 p 3] 8228

SOWING OF SPRING CROPS--Over 500 sowing complexes created in the republic's enterprises have begun sowing early spring crops. Moldavian farmers have decided to complete sowing on fields surpassing a million hectares within a compressed period of time. [Text] [Kishinev SOVETSKAYA MOLDAVIYA in Russian 7 Apr 85 p 1] 8228

AVIATION AIDS FARMING--Pilots of agricultural aviation were first in the republic to begin spring field work--from the air they began spreading fertilizer on land that had become free of snow. The use of planes will help us to increase the fertility of 1.2 million hectares of land, or about half of all agricultural lands in the republic. Aviation is making a weighty contribution toward the intensification of agricultural production. Most Moldavian agricultural lands are located on hillsides and in winding valleys, which hinders the maneuverability of equipment. Two specialized aviation centers have been created to help farmers. Now almost every large enterprise has at its disposal an airstrip for helicopters outfitted with special equipment. Most top-dressing operations are carried out with the help of these helicopters. This year aviators must also treat 650,000 hectares of agricultural lands and forests against pests and diseases. Pilots have become the dependable helpers of field workers in carrying out surveys of crop condition, soil moisture, degree of soil erosion and "health" of forest lands from the air. [Text] [Kishinev SOVETSKAYA MOLDAVIYA in Russian 5 Apr 85 p 1] 8228

PROGRESSIVE METHODOLOGY--Kishinev, 15 [Apr]--The warm weather that has developed everywhere enables us to carry out spring field work widely. Pilots have top-dressed over 100,000 hectares of winter crops with nitrogen fertilizers. Without losing time, enterprises have begun sowing early spring crops and perennial grasses. Machine operators of Brichanskiy Rayon needed only 1.5 days to complete sowing peas and barley. Soil is being prepared for the main grain forage crop, corn, which will occupy almost 0.5 million hectares. Following the example of machine operators from Drokiyevskiy and Dubossarskiy rayons, combined sowing units are now being equipped with additional plowshares that will enable farmers to apply herbicides into the soil by means of the strip method. In comparison to surface application, this method has a number of advantages. Herbicides are economized on and their effectiveness is improved. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 16 Apr 85 p 1] 8228

RICE SOWING BEGINS--Rostov-on-Don--The farmers of Proletarskiy Rayon were first in the oblast to begin sowing. The rice plantations, the most northernmost in the country, occupy over 30,000 hectares of arable land on the Don. Oblast rice farmers have decided to produce no fewer than 40 quintals of the white grain per hectare by means of introducing progressive forms of labor organization and a system of quality management of field work in each enterprise. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 28 Aug 85 p 1] 8228

WINTER CROP TOP DRESSING--Frunze--The aviators of agricultural aviation and the machine operators of fertility detachments in the Kirghiz SSR have commenced applying a top dressing to their winter crops. As a result of an increased amount of technical equipment and efficient interaction among all of the production teams, the plans call for fertilizer to be applied to all of the winter fields -- approximately 250,000 hectares -- two times more rapidly than is usually the case. /Text/ /Moscow TRUD in Russian 20 Mar 85 n 1/ 7026

FERTILIZATION GOALS--In addition to being a measure for raising yields, the use of fertilizer in crop rotation plans in the steppe zone of the southern Urals region also serves as a means for combating drought conditions. Despite a considerable increase in the deliveries of mineral fertilizers, there is still not enough available for applying complete norms for grain crops on the entire grain crop area. Thus, during the next few years the pre-sowing method for utilizing mineral fertilizers, in reduced norms, will continue to be the chief method. Future plans call for fertilizer to be used in the norms required for the planned yields. Almost 80 percent of the arable land in Orenburg Oblast is characterized by a very low supply of mobile phosphorus, approximately 12.5 percent -- is poor in exchangeable potassium. The amount of readily hydrolyzed nitrogen in the central and western zones fluctuates from 3.8-9.2 milligrams, in the northern zone -- to 6.1-14.5 milligrams per 100 grams of soil. Over a large portion of the arable land, the agricultural crops require phosphorus and nitrogen fertilization. The use of fertilizer in order to obtain the planned barley yield is economically advantageous: the grain yield increases sharply and reductions take place in labor and material expenditures required for grain production. /By Candidate of Agricultural Sciences V.F. Abaimov, Orenburg Agricultural Institute/ /Excerpts/ /Moscow KHIMIYA V SEL'SKOM KHOZYAYSTVA in Russian No 9, Sep 84 pp 14, 17/ /COPYRIGHT: Izdatel'stvo Khimiya, Khimiya v sel'skom khozyaystve, 1984/ 7026

ORENBURG OBLAST SOIL TYPES--Orenburg Oblast is distinguished by a considerable variety of soil types. Meadow calcareous, eroded and solonetz chernozems are found extensively throughout the oblast. Solonetz soil constitutes 19.5 percent of the land area. Each year, grain crops are grown in Orenburg Oblast on approximately 300,000 hectares of solonetz soil. /By V. Kononov, scientific worker in a laboratory for the reclamation of solonetz soils of the Orenburg Scientific Research Institute of Agriculture and A. Kryuchkov, Candidate of Agricultural Sciences and head of the Department of Seed Production for the Orenburg Scientific Research Institute of Agriculture/ /Excerpt/ /Sverdlovsk URAL'SKIYE NIVY in Russian No 1, Jan 85 p 22/ /COPYRIGHT: "Ural'skiye nivy", 1985/ 7026

MOISTURE RETENTION WORK--Orenburg, 18 Feb--The first half of this winter in Orenburg Oblast was marked by only a small amount of moisture. The situation changed in February when snow began falling throughout the oblast. The white cover on the fields quickly reached 21-33 centimeters in height. In order to retain the snow and prevent the wind from carrying it into ravines, the oblast's farmers in all areas began working the snow into drifts out on the fields. This work is being performed best in Novoorskiy, Oktyabrskiy,

Adamovskiy and in certain other rayons. /By I. Gavrilenko/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 19 Feb 85 p 1/ 7026

HIGH QUALITY SEED--Orenburg, 18 Mar--The workers in the oblast's eastern virgin lands region, whose fields were subjected to drought conditions last summer, have very rapidly brought up a large batch of seed from the railroad station, seed which arrived from farms in the Altay Kray. All of this seed was cleansed, graded and improved to a high sowing condition. A considerable portion of this seed was for the very promising Tselinnaya-20 strong wheat variety. In all, approximately 350,000 hectares will be sown in Orenburg Oblast using high quality seed obtained from the state resources. /By I. Gavrilenko/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 19 Mar 85 p 1/ 7026

AIRBORNE FERTILIZER APPLICATIONS--Orenburg, 16 Apr--Regular aircraft flights over the fields have commenced in the southern part of the oblast, where the weather conditions permit mineral fertilizer to be applied from the air. In all, this work is being carried out by 50 crews; they are applying mineral fertilizer to fields set aside for the sowing of spring crops and they are also applying a top dressing to winter crops and grasses over an area of 350,000 hectares. /By I. Gavrilenko/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 17 Apr 85 p 1/ 7026

GOOD FARMING CONDITIONS--Orenburg--Sowing operations have commenced in the southern rayons of Orenburg Oblast. Favorable conditions prevail this spring for obtaining good grain yields. The moisture supplies in the soil are better than those for last year and the seed has been better prepared. The kolkhozes and sovkhozes in Sol-Iletskiy Rayon carried out their cover harrowing work in just 2 days and they are sowing their early grain crops without delay. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 29 Apr 85 p 1/ 7026

MINERAL FERTILIZER APPLICATION--Frunze--The field crop growers in the Kirghiz SSR have completed the task of applying a top dressing to their winter crops. Mineral fertilizer has been applied to all 252,000 hectares. /Text/ /Moscow TRUD in Russian 20 Mar 85 p 1/ 7026

SOWING OPERATIONS CONTINUE--Kirghiz SSR--Owing to the abundant amount of snow and severe winter conditions experienced this year, the sowing schedules for the Kirghiz SSR were postponed for almost 2 weeks. But this circumstance did not at all disturb the republic's farmers: indeed, the soil received an unprecedented amount of moisture this year and thus the carrying out of the sowing work within a brief interval of time was simply a matter of equipment and good organization. Even the largest farms required only 5-7 days to complete their sowing campaign. The sowing operations are being carried out at a maximum tempo in the rich Chu River Valley. It was only several days ago that a heavy coat of ice covered the fields of the seed production Sovkhoz imeni 50-Letiya SSSR in Sokulukskiy Rayon. And today spring is fully on hand. The machine operators on the farms are carrying out moisture retention work, sowing their grain crops and perennial grasses, applying a top dressing to their winter crops and repairing the fields occupied by alfalfa. The sowing work is proceeding in a fine manner at the Chuyskiy Sovkhoz in Kalininskiy Rayon. Over a period of 2 days, the grain crops were sown here on one half of the spring crop fields. The Druzhba Kolkhoz in Sokulukskiy Rayon is completing its sowing work. With each passing day the sowing campaign is advancing higher into the mountains. /by V. Onishchenko/ /Text/ /Moscow TRUD in Russian 6 Apr 85 p 1/ 7026

SOWING COMPLETED--Taldy-Kurgan--The machine operators of Panfilovskiy Rayon completed the sowing of early spike crops in record time. [Text] [Moscow TRUD in Russian 18 Apr 85 p 1] 8228

SOWING COMPLETED ON SCHEDULE--Alma-Ata, 22 [Apr] (TASS)--The farmers of the foothill valleys of Alma-Ata and Dzhambul oblasts completed the sowing of spring crops in good agrotechnical time. Here the last sowing units have left the grain fields. The watch method of labor organization, which has proven itself well in harvesting operations, contributed to the fulfillment of the entire complex of operations quickly and with high quality. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 23 Apr 85 p 3] 8228

SPIKE CROPS BEING SOWN--Alma-Ata (TASS)--The farmers of a large area in Tyan'-Shan'--Alma-Ata, Taldy-Kurgan and Kzyl-Orda oblasts--have begun sowing spike crops. Following the example of virgin-lands farmers, the majority of enterprises here favored the soil-conservation system of farming. The plow has given way to the sweep. The usual sowers are stubble sowers. In the semi-desert enterprises are planting wheat, barley and peas in strips 60 meters wide between strips of wheat grass of the same width. With the protection of grasses crops withstand dry winds better and soil erosion is totally eliminated. The effectiveness of strip distribution of crops and of sweep cultivation of soils is strengthened by protective forest belts which cross fields numerous times at right angles to prevailing winds. They decrease the force of the wind and increase the water-retention capabilities of the soil. Grain farmers apply mineral fertilizer into the rows at the same time as they sow. Grain farmers allocate only 5 days for the sowing of spike crops. Large-group use of equipment in two shifts and well-organized servicing of machines in the field help to speed up work. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 7 Apr 85 p 1] 8228

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18 June 1985

LIVESTOCK

STATUS OF RSFSR LIVESTOCK WINTERING, VARIOUS REGIONS

Dairy Herd Productivity Reviewed

Moscow SOVETSKAYA ROSSIYA in Russian 30 Jan 85 p 1

[Article by RSFSR Minsel'khoz [Ministry of Agriculture]: "Consolidating Success"]

[Text] In order that the collectives of dairy farms in Russia meet this year's quotas, milk yield must be increased an average of 40-50 kilograms per cow in the republic. This is a realistic goal, but intensive work will be needed to fulfill it.

In comparison to the same period last year, daily milk yield increased most in Krasnodar Kray, the Kabardino-Balkar ASSR and Murmansk and Magadan oblasts. In the North Osetian ASSR in October-December milk yield per cow increased by 37 kilograms as compared to last winter, and it increased even more since 1 January. Krasnaya Osetiya Kolkhoz of Mozdokskiy Rayon, which produced 4,500 kilograms of milk per cow in 1984, continues to increase the productivity of livestock. Success is explained not only by the fact that the kolkhoz has stockpiled feed in sufficient quantities and that it is mainly of the first and second class. It is also important that kolkhoz workers take care of the feed and try to enrich it--the feed shop operates well and enrichment with yeast and the addition of malt to concentrates are practiced.

In the republic as a whole, about 300 tons more milk is sold daily than last year. This was achieved primarily by means of a greater marketability of dairy farms. The general result could have been better, without doubt, if full potential had been utilized everywhere.

In Kemerovo Oblast and Krasnoyarsk Kray there is more feed than last winter, but milk yield is lower. In many enterprises the necessary attention is not being given to feed preparation, as before, and from 13 to 15 percent of feed-preparation shops continue to remain idle. There is more feed than previously in Altay Kray, but the productivity of the dairy herd has been decreasing steadily since the beginning of the stall-upkeep period. Shortcomings in feeding cows are exacerbated by errors in organizational work--socialist competition is not organized the way it should be everywhere and all possible measures are not being taken to improve the working conditions of the milkmaid.

The dairy farms of Kalmyk ASSR, where daily milk yield was lower than last year's levels in the course of 3 weeks in January, are losing their position. The amount of feed procured by the autonomous republic was insufficient, its quality is low and it is prepared every which way. Slightly less than three-fourths of straw is given to livestock in unprepared form. In a number of kolkhozes and sovkhozes mismanagement still exists. On the dairy farm of Buratinskiy Sovkhoz both feed-preparation shops have been repaired but are not operating. Record-keeping of feeds has not been organized. There is no reason to be surprised that the daily milk yield per cow here is less than 2 kilograms.

The mass-calving period has arrived on livestock-raising farms; the future productivity of animals will be affected by how they are cared for during this time. For example, on the farm of Shigayevskoye Division of the teaching enterprise of the Chelyabinsk Institute of Mechanization and Electrification of Agriculture, workers are increasing the milk yield of newly calved cows in a zootechnically skilled manner. Every cow at Shigayevskoye now yields over 9 kilograms of milk daily; the group of cows tended by milkmaids V. I. Bunakova and M. P. Snegireva yield over 15 kilograms of milk daily. Incidentally, last year they produced 5,900 kilograms of milk per cow. Regular large and constantly-growing indicators are achieved to a significant degree by means of flow-shop technology--it has allowed kolkhozes to secure cadres and the milkmaids who work there are experienced and remain in the kolkhoz for many years.

We can cite similar examples in every oblast, kray and autonomous republic. Progressive experience, however, is still not being disseminated as energetically and rapidly as it should be. In Ivanovo and Lipetsk oblasts there are more calves this winter, but little concern is shown for preserving them and for increasing the milk yield of cows. Half of the enterprises do not have birthing sections or dispensaries for calves. This resulted in the fact that the percentage of rejected cows has increased.

The second half of the wintering period is always more difficult than the first. Now as never before we need a high level of organization. Commercial dairy enterprises in the republic have real possibilities at their disposal to secure the successes that were achieved last year and to achieve even more.

Volgo-Vyatka Area Wintering

Moscow SOVETSKAYA ROSSIYA in Russian 5 Feb 85 p 1

[Article by S. Yatsenko with commentary by A. A. Vasev, Director of the Main Production Administration of the Volgo-Vyatka Region of RSFSR Minsel'khoz [Ministry of Agriculture]: "When Organization is Not Enough/Accustomed to Losses"]

[Excerpt] Milk yield in Rozhkovskiy Sovkhoz is the lowest in Sosnovskiy Rayon [Gorkiy Oblast]. The sovkhoz accepted this report placidly. This is not the first time that the enterprise has been included among those that lag

behind. In the rayon everyone has gotten used to hearing the same justifications and references to difficult circumstances year after year from the director of the sovkhoz, M. I. Trifonov. All we have to do is look more closely at how things are organized in the Rozhkovskiy and it becomes clear that the reasons for their problems are other than those stated.

During this year's wintering period the sovkhoz herd was poorly supplied with feeds. This meant that all possible measures should have been taken to increase the nutritive value and digestibility of feeds. Last year a shop was built for this purpose by patrons. All the sovkhoz had to do was heat the facility and organize work.

I examine the building together with the head zootechnologists, N. F. Khramov. It is half covered with snowdrifts. The doors have been torn off and there are bolts, nuts and washers strewn all over the floor. Costly mechanisms are not being cared for.

In the sovkhoz not a single farm has been mechanized. A feed distributor was installed on Nikolayevskaya Farm, but it did not operate for long.

The results of work are affected by the approach to work. Cows yield slightly more than 3 kilograms of milk daily; weight gain of young feeder bulls hardly reaches 400 grams.

The rayon's party and soviet organs have an undemanding attitude toward the situation that exists in the sovkhoz. The local newspaper, ZA KOMMUNIZM, has published critical material on the status of overwintering in this enterprise on numerous occasions, but not a single one has become the subject of discussion by the buro of the party raykom.

[Commentary by A. A. Vasev] The livestock farmers of almost all oblasts and autonomous republics in the region are carrying out this year's overwintering period with fewer feed reserves. There is great variability in work results. The differences in daily milk yield in individual rayons sometimes equal 8-10 kilograms. Everything depends on the organization of the livestock raising shop, on how feeds are prepared and utilized and on the work attitude of people on the farm.

The livestock farmers of Mari ASSR do the best work. In the course of 4 months of overwintering they achieved a growth in milk productivity.

The circumstances of overwintering are difficult in Kirov Oblast. Milk production decreased by 5.6 percent. With the onset of cold weather a drop in productivity was tolerated. The enterprises of Bogorodskiy, Nolinskiy and Falenskiy rayons tolerate interruptions in feeding; not only have they not assimilated effective methods of feed preparation, they do not demonstrate regular managerial quickness and account-keeping. They could be helped, for example, by an accessible method such as using sleighs to move capacities for steaming coarse feeds, but this method is used little.

Today livestock farmers are faced with the task of maximally utilizing capacities for preparing feeds and for improving their nutritive value. In

Mordovia almost all feed shops are operating. A great deal of attention there is paid to the chemical treatment of coarse feeds. This is done with the active participation of RAPO [Rayon Agro-Industrial Association] partners--the associations of Sel'khozkhimiya [Agricultural Chemical Association] and Sel'khoztekhnika [Agricultural Equipment Association]. Many Chuvash kolkhozes and sovkhozes utilize effective forms of wages in their feed shops. Wages depend not only on the quantity of processed feed but on its quality as well.

Mass calving has begun on farms and in complexes. Production volume will depend on the correct and well-organized milking of cows. The zootechnical and veterinary services will have to exhibit special concern here.

This winter it is especially important to precisely control the monthly expenditure of feed everywhere, as is done in the Chuvash ASSR and Mordovia. People's controllers and deputies must be recruited to keep accounts of supplies.

North, Northwest Area Commentary

Moscow SOVETSKAYA ROSSIYA in Russian 7 Feb 85 p 1

[Article by B. Lazarev, Pskov Oblast, with commentary by V. A. Romanov, director of the Central Directorate of the North and Northwest Region of RSFSR Minsel'khoz: "A Let-Down in Terms of Service"]

[Excerpts] The situation in Kolkhoz imeni Michurin is not a pleasing one. Whereas in December plans on the production and sale of products to the state were fulfilled, today farms are lagging behind. Each cow is now producing less milk than 1 year ago.

One of the reasons for such a situation is the emergency condition of equipment and mechanisms on livestock-raising farms. Milking equipment is old and breaks down often. The kolkhoz cannot make up its mind to remove it because the Strugo-Krasnenskiy Rayon association of Sel'khoztekhnika will not promise to install new equipment. The automatic water troughs are simply a calamity--they leak constantly, and then the cowsheds become damp. Transporters for manure removal, which are constantly breaking down, are a cause of great agitation for livestock farmers.

And what is the local association of Sel'khoztekhnika, with which the kolkhoz did incidentally conclude an agreement to service farm equipment, doing about these problems? It has dodged its obligations. The Strugo-Krasnenskiy Rayon association not only does not send people to farms to repair equipment, it also does not supply farms with spare parts.

Many other rayon enterprises have complaints about Sel'khoztekhnika. One gets the impression that the association has forgotten its main and direct obligation--to be the dependable partner of livestock farmers.

[Commentary by V. A. Romanov] The livestock farmers of our region planned great goals for the present wintering period. It is planned to sell the state

520,000 tons of meat, 2.12 million tons of milk and 2.53 billion eggs. This is 3-6 percent more than during the previous winter period.

I will note from the start that these goals are being fulfilled. The productivity of every cow in the two regions as a whole is 26 kilograms greater, and since the beginning of the overwintering period has reached 663 kilograms of milk. Increased milk yield has been achieved by almost everyone, with the exception of farm workers of Arkhangelsk Oblast and Komi ASSR. The reasons for lags differ. To some degree work was affected by the extreme cold, with temperatures dropping to minus 48°C, and by a shortage of concentrated feeds. But the main reason is another one. Local specialists were not able to change livestock over to full-value rations in early fall. This was the cause of a drop in livestock productivity.

There are also shortcomings in the work of feed shops. There are 2,030 of them, including 1,606 earmarked for cattle. However, only 85 percent of feed "factories" are operating, and in Pskov, Vologda and Arkhangelsk oblasts the proportion is even smaller. We are also being affected by shortcomings in the technical servicing of farm and shop equipment, which has been rightly reported on in the urgent signals from Pskov Oblast. Not everywhere are rations enriched with mineral supplements and the waste products of the food industry. The thermochemical treatment of coarse feeds is being introduced poorly.

All of this cannot but be reflected in milk yield and in the weight gain of animals.

East Siberian Region Reviewed

Moscow SOVETSKAYA ROSSIYA in Russian 13 Feb 85 p 1

[Article by R. Tas-Ool, Tuva ASSR, and commentary by N. N. Oblachkov, deputy director of the Central Directorate of the East Siberian Region of the RSFSR MSKh [Ministry of Agriculture]: "No Profit From the Lesson"]

[Excerpts] As recently as 3 years ago Choduraa Sovkhoz of Tes-Khemskiy Rayon was still considered successful. An alarming signal was given a year later, when the indicator on the preservation of lambs suddenly dropped 11 percent. The situation was even worse for the neighboring sheep farmers of Tes-Khem Sovkhoz--only 57 lambs were produced and preserved per ewe. The shepherds of other enterprises in the rayon have also retreated. Thus, when results were summarized, the Choduraa still remained in the "golden" middle.

Perhaps this is why the sovkhoz management did not hurry to draw conclusions. If any measures were taken, they were not of a cardinal nature and goals were naturally not reached. The overwintering period is difficult. The sovkhoz has fallen to last place in the republic.

Anyone who has dealt with sheep knows how much depends on people who care for the young. In the sovkhoz this work may be assigned to the most negligent. As soon as shepherd D. Minchey became ill, sheep in the flock began to die. As a result, 70 sheep remained per 100 ewes. A year earlier the shepherd had produced 102 lambs per 100 ewes.

This example shows once again that success in any endeavor depends on people, on their striving and attitude toward work.

[Commentary by N. N. Oblachkov] In the kolkhozes and sovkhozes of East Siberia many farm collectives and shepherd's brigades were able to increase the productivity of livestock and to preserve the herd from the first days of winter, which even according to the Siberian calendar arrived almost a month early.

In the competition of collectives of dairy farms the pace is being set by the workers of the Angara region. The farmers of Irkutsk Oblast have allowed the productivity of cows to drop in recent years. This is why it is satisfying to note that the situation is finally beginning to change for the better.

The livestock farmers of Tuva ASSR are working without decreasing the pace that was set in 1984. Last year they fulfilled all plan goals related to the sale of agricultural products to the state. However, even here not all possibilities are taken advantage of--this is attested to by the letters from Choduraa Sovkhoz published above. The farm workers of Krasnoyarsk Kray as before cannot achieve the necessary pace for increasing milk productivity.

The situation is especially urgent for the dairy farm workers of the Transbaykal area. The livestock farmers of the Buryat ASSR and Chita Oblast have delayed harvesting and were not able to create the necessary reserves of feed for animals. We know how long the Transbaykal winter is. Complete selflessness and a high level of responsibility for the assigned task are required of local agricultural organs, directors of kolkhozes and sovkhozes and livestock farmers. Many enterprises and rayons did not give in to difficulties. The enterprises of Selenginskiy and Dzhidinskiy rayons of Buryat ASSR have organized the steaming and yeast-enrichment of feeds.

But not all Buryat enterprises by far work in this manner. The preparation of feed is poorly organized precisely in those rayons where shortcomings are being experienced. This refers to the enterprises of Kabanskiy, Zaigrayevskiy, Yeravninskiy and a number of other rayons.

Especially alarming is the situation in sheep-raising in Chita Oblast. Here the preservation of the herd is low and the productive qualities of sheep are dropping.

Central Chernozem Zone Production

Moscow SOVETSKAYA ROSSIYA in Russian 3 Mar 85 p 1

[Articles by V. Lebedev, Kalach, Voronezh Oblast, and V. Mishin, Lipetsk Oblast, with commentary by A. D. Ovchinnikov, director of the Main Production Administration of the Central Chernozem Zone of the RSFSR Ministry of Agriculture: "Slumps Should not be Allowed/Precise Record-Keeping/No Demand"]

[Text] In Bol'shevik Kolkhoz of Kalacheyevskiy Rayon, Voronezh Oblast, more milk is being produced with a lesser expenditure of feeds. Here work is done

according to cost-accounting goals; people are learning to keep accounts of expenditures of all items.

All forage reserves are strictly and precisely allocated, for example. Both milkmaids and feed shop operators know the amount that has already been used and how much will be used in the future. Moreover, they do not strive to "beat out" additional funds, especially of costly concentrates, because after all it is more advantageous to have as much feed as necessary. Standardized rations that are balanced in protein and other nutritive substances enable farmers to economize.

Since the start of the wintering period work effectiveness has once again been confirmed by results. The sale of first-class milk has increased to 96 percent, and the cost of every quintal of production decreased by 70 kopecks. There was a noticeable drop in expenditures for the repair of mechanisms and for transportation.

Today dozens of livestock-raising collectives in the republic are working according to cost-accounting principles.

[V. Mishin] In Lebyazhenskiy Sovkhoz of Lipetsk Oblast workers can't seem to increase the marketability of milk. At present it is slightly over 60 percent, whereas in leading enterprises it reaches 90. The reason for this is that Lebyazhenskiy livestock farmers produce milk with a low fat content and use a great deal of it to feed calves.

"It seems that we stockpiled a sufficient quantity of feeds, but we aren't obtaining the necessary return on them," milkmaids complain. "Our feed shops operate with interruptions; thus it becomes necessary to feed livestock forage without preliminary crushing and steaming."

In the sovkhoz we need the eye of management and regular demandingness regarding the work that is accomplished. Otherwise how can we explain that with the growth of feed expenditures milk yield continues to fall?

[Commentary by A. D. Ovchinnikov] In all oblasts of the Central Chernozem Region there was an increase in the production and sale to the state of livestock products during the winter months, as compared to the same period last year. Particularly substantial increases were achieved by the workers of farms and complexes in Belgorod, Voronezh and Tambov oblasts. The best indicators for productivity of the dairy herd were achieved by Belgorod farmers--they did not allow these indicators to drop in a single rayon. Fairly good weight gains are being achieved by feeder livestock in some Kursk enterprises.

However, the general work picture in the branch is characterized by contrasts and variety in results. The reasons must be sought in the shortcomings of feed production. During last year's dry summer a significant portion of kolkhozes and sovkhozes was not able to procure a sufficient amount of high-quality coarse and succulent feed. With a skillfull, business-like approach it is nevertheless possible to balance rations in terms of nutritive value, which is done by many kolkhozes and sovkhozes of Voronezh Oblast. Here 267 feed

shops were built for the current stall-upkeep period; this is almost double the number planned and it has enabled farmers to significantly increase the processing of straw. In the face of a general critical situation involving feed, Voronezh farmers are not retreating from their positions. In 22 oblast rayons the productivity of livestock is being retained at last year's levels, and in Nizhnedevitskiy Rayon an increase in milk yield has been achieved.

It is completely apparent that the problems of economizing on forage, of decreasing expenditures and of increasing the responsibility of workers are becoming a priority at this stage. The acute signal from Lipetsk Oblast attests to the considerable shortcomings in the organization of feeding and care for livestock and to poor control over production on the part of directors and specialists. In some regions attempts are made to cover up one's own mismanagement with complaints about the shortage of forage. As shown by local raids and mutual examinations of enterprises, problems often arise not because of a shortage of feed but because of carelessness and the inability to utilize the feed for the greatest return. In a number of enterprises of Lipetsk and Kursk straw, silage and root crops are fed to livestock in unprepared form, without being crushed or steamed.

Deserving of special attention now is work with cadres. The time has come to summarize the results of what livestock farmers learned this winter. The attestation of achievement of a class rating--an indispensable condition for further improving the moral and material interest of farm workers in end results--is mandatory.

The livestock farmers of the Central Chernozem Region have all the possibilities for avoiding a drop in livestock productivity and for completing the stall-upkeep period adequately.

Winter Concerns, Commentary

Moscow SOVETSKAYA ROSSIYA in Russian 17 Mar 85 p 1

[Article by A. Kosmarova, farm director of Gigant Kolkhoz, Penza Oblast and by L. Rakina and A. Ogibina, milkmaids of Spasporubskiy Sovkhoz, Priluzskiy Rayon, Komi ASSR with commentary by V. I. Dergachev, chairman of the RSFSR republic trade union committee of agricultural workers: "What Kind of Mood Are You In, Livestock Farmer?/Tasty Lunches/Not a Nail Was Hammered In"]

[Excerpts] A year ago builders have us a good present--they put a new facility into operation which includes two cowsheds and social quarters. Production technology has been perfected. We have milk channels, manure-removal transporters and ventilators. Feed distribution is mechanized. The day is divided up conveniently. The people value all of these good transformations and try to increase their knowledge and skill. They work in a coordinated and inspired manner.

The kolkhoz management and the party committee are demonstrating great concern for our collective. An excellent cafeteria has been opened at the farm. The lunches are tasty and inexpensive and lunch and dinner are free.

The stall-upkeep period is proceeding well on the farm and the results are satisfying. Now we are producing 11 kilograms of milk daily per cow. The kolkhoz is completing the five-year plan on the production of milk and its sale to the state ahead of time.

[Rakina] Rakinskaya farm where we four milkmaids work is not very large--there is a total of 100 cows. Perhaps we had problems this summer because no one is really concerned with our needs--more thought is put into large complexes. But on the other hand, we feel that we cannot yet do without such small farms and that they also should be thought of and cared for. Yet we see no such concern. Before winter set in not a single nail was nailed in--in the fall and spring the roof leaks and in the winter it is cold. In subsidiary facilities things are even worse; the roof is in critical condition. In the washroom the water is in puddles. Hay and frozen silage are brought in from outside by hand. There are no replacement milkmaids.

Milkmaids M. Karmanova and A. Lobanova of Kerosskaya Farm in our sovkhoz wrote to the rayon newspaper about our problems. A raid took place, but no changes took place. This is why we show low work results--we are not fulfilling our plan and in comparison to last year milk yield has decreased by several dozen kilograms. But after all even if our collective is small it can supply the state with considerable more products.

[Commentary by V. I. Dergachev] During the intensive wintering period livestock farmers are especially in need of good working and living conditions. Recently a considerable amount has been done in this direction in many areas of Russia; attention to the livestock-raising shop has increased. This has resulted in a noticeable increase in production output. Cadres are being secured on farms better.

Great and purposeful work in this area is being done in Leningrad and Chelyabinsk oblasts, Mari ASSR and Krasnodar Kray. A great deal is being done here to mechanize production, to introduce contemporary technologies and to organize labor efficiently. In the collectives that work two shifts the people are usually constant and they fulfill their goals successfully. This is well-illustrated by Zarya Kolkhoz, Bogorodskiy Rayon, Gorkiy Oblast. For 10 years now there has been no turnover of cadres on the enterprise's farms. All livestock farmers have good housing, comfortable living conditions and enough time for their families and domestic matters. Production indicators are constantly increasing in the kolkhoz; during the peak winter period daily milk yield per cow exceeded 10 kilograms.

At the present time one-third of Russian farms are working according to a two-cycle or two-shift regimen. This is obviously not enough. Whereas in Novosibirsk and Omsk oblasts and Altay Kray the "double shift" and double-cycle milking have become routine in most enterprises, in oblasts such as Tyumen, Kursk, Smolensk and Kaluga the prevailing daily schedule on farms is not convenient, especially for young livestock farmers.

As attested to by practical experience, success in the village dairy shop depends to a large degree on solving the most vital social questions. Everything is important here--the types of social facilities, whether there is a

place to rest and to eat, how the "red corner" is equipped and whether medical and everyday services are available close to the farm. Not everyplace needs new facilities for these purposes. If attention is given to this and an effort is made it is possible to create a social section by means of reconstruction and renovation. This is what is being done in Tambov Oblast, for example. There improvements in non-production, everyday conditions for livestock farmers are being made systematically and persistently. However, there are signals in the form of letters from Priluzskiy Rayon of Komi ASSR which are disappointing. Complaints are coming to the republic trade union committee from Kalinin, Kirov and Tyumen oblasts about the lack of organization of everyday living facilities for the livestock farmer. Frequently it happens that money is spent on building and on mechanisms, but work conditions on the farm do not become easier. Thus, in Lomovskiy Sovkhoz, Arzamasskiy Rayon, Gorkiy Oblast, the ventilation system in production buildings is in a state of disrepair, sanitation-living facilities are not in operation and shower rooms have been converted into storerooms.

The indignation of the letter writers concerning poor conditions is justified. Their complaints about the administrations of their own enterprises can also be directed fully at trade union organizations, which did not demonstrate timely concern about people and did not respond to their needs.

Before livestock farmers lies a difficult period. The successful completion of wintering depends on diligent and conscientious work at every work place. Things will go well in places where the work and living conditions of livestock farmers are at the center of attention of directors of enterprises and of party, soviet and trade union organizations.

Regional Commentary

Moscow SOVETSKAYA ROSSIYA in Russian 6 Apr 85 p 1

[Article by A. Bochkarev, Kuybyshev Oblast, and Ye. Nikoleyev and G. Luk'yanov, Tatar ASSR, with commentary by A. D. Mikhaylov, Director of the Central Directorate of RSFSR Minsel'khoz: "Business-Like Solutions/Knowing How to Count/Past the Feeders"]

[Text] Last winter Kuybyshev livestock farmers were the victors in all-union competition. A large group of milkmaids headed by A. Vorgodyayeva, meritorious agricultural worker of the RSFSR, surpassed a yield of 5,000 kilograms of milk per cow. Experience and increased skill have enabled them to continue to work successfully. With smaller feed reserves there was an increase in the production of both meat and milk as compared to last year. There has never before been such a winter "harvest" on Kuybyshev farms.

With increased milk yield, the expenditure of feed per month per standard head of cattle decreased on the average in the oblast from 3 quintals of feed units during last year's wintering period to 2.4 quintals of feed units this year. This is achieved by means of the better work of feed shops and feed kitchens, of improvements in zooveterinary work and sanitation conditions and of greater discipline on farms.

[Nikolayev] In milk production, Menzelinskiy Rayon occupies an unenviable position in the republic report. It did not fulfill last year's plan, and today things are going worse here than in other places. A great deal is said in the rayon about objective difficulties. However, a raid of farms revealed other reasons for the lags.

Here, for example, is the picture we saw in Kolkhoz imeni Vakhitov. Milkmaids removed manure manually and equipment did not operate.

In Kolkhoz imeni Tukaya harvest transporters on farms were also not operating on the day of our arrival. The cows were dirty, feed was distributed carelessly and a great deal of it fell past the feeder trough. No one here is concerned about a more convenient work regimen for milkmaids. All of this affects the results--they are even worse than in Kolkhoz imeni Vakhitov; the daily milk yield per cow is less than 5 kilograms.

[Commentary by A. D. Mikhaylov] No matter how abundant in bad-weather difficulties this winter was, testing us with freezing weather and with snowstorms, we still feel that the most difficult period of wintering is the final stage--the spring months. Milk and meat production are being increased during the current stall-upkeep period by Kuybyshev and Ul'yanovsk oblasts and the Tatar ASSR. In enterprises a great deal of attention is being given to preparing and enriching feeds. The care of animals is improving. In Kuybyshev Oblast on most farms, for example, lukewarm water is not being given to animals to drink. These and a number of other measures have enabled most enterprises of Volzhskiy and Kinel'skiy rayons to fulfill their quarterly plans for the sale of milk to the state ahead of time.

The livestock farmers of Volgograd and Saratov oblasts are now working under difficult conditions. Volgograd farmers need 450,000 tons of straw, which they are acquiring from other regions of the republic, to complete the wintering period. Stavropol farmers have given a particularly large amount of aid to the oblast. Instead of 25,000 tons of coarse feeds, they have allocated 40,000 tons. Ukrainians have demonstrated fraternal solidarity. But farmers of Omsk Oblast and the Tatar ASSR are delaying deliveries.

Saratov livestock farmers can forego acquiring coarse feeds from outside the oblast, despite their difficulties. All they must do is redistribute reserves more efficiently on their territory and crush and flavor straw on a mandatory basis. But this is not done everywhere.

In good enterprises this winter's difficulties acted as a mobilizing force that helped to discover additional reserves. At the same time, in some places directors and specialists cover their inefficiencies with objective difficulties. An example of this is Kamenskiy, Pachelmskiy and Nizhnelomovskiy rayons of Penza Oblast. A great deal is said there about the feed shortage, but at the same time feed losses are tolerated, records or feed are not kept and there is no economizing on feed.

In the economic region there are 6,670 feed shops and kitchens in operation. In practical terms it is possible to utilize all coarse feeds in prepared form, but in reality only 72 percent is prepared. We cannot tolerate a situation in which supplies brought from afar are utilized so ineffectively.

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CATTLE WINTERING PROGRESS, FINAL PHASE

Moscow SEL'SKAYA ZHIZN' in Russian 4 Apr 85 p 1

[Editorial article: "Completing Wintering"]

[Text] The most responsible, final days of cattle wintering have arrived. In order to avoid any drop in farm productivity during this complex period we must utilize all reserves for increasing production output, we must not forget a single work section or pass up any possibilities for replenishing rations and we must do everything possible to improve labor and rest conditions for livestock farmers.

Now as never before it is important to establish the strictest controls over the expenditure of feed reserves, to carefully consider all sources for replenishing these reserves, and to increase the personal responsibility of directors and specialists of enterprises and middle-link workers for the utilization of every kilogram of forage and for the strict fulfillment of the requirements of zootechnical and veterinary science. Strong technological and labor discipline, order in everything and a decisive struggle with even the slightest demonstrations of indifference and slovenliness--this is the style of work that must exist now on farms and in complexes.

Branch workers are showing by their actions the type of changes they are capable of making. Since the beginning of the wintering period the livestock farmers of Lithuania, Moldavia, Latvia, Estonia, the Karelian Autonomous Republic, and Murmansk, Leningrad, Moscow and several other oblasts of the RSFSR have already produced 1,200-1,800 kilograms of milk per cow. In comparison to the preceding stall upkeep period, the kolkhozes and sovkhozes of the Ukraine, Belorussia, Georgia, Azerbaijan, Lithuania, the Kirghiz SSR and Armenia increased their meat sales. In practically every republic and every oblast there are enterprises which achieve the stable development of livestock raising and which fulfill their quotas on the sale of milk, meat and other products to the state with honor.

However, not everyone has been able to deal with difficulties. Some enterprises, rayons and oblasts have found themselves in great debt to the government. In February there was a noticeable drop, as compared to last year, in levels of milk yield in Tajikistan and in the Ukraine and in levels of weight gain--in the RSFSR and Kirghiz SSR. Everyone understands that a

drop in farm productivity is the result of unsatisfactory preparations for the stall upkeep period. We must draw the proper conclusions from this lesson. But right now the most important thing is to achieve a branch development that will enable us to increase the production of milk and meat and to unconditionally fulfill state plans.

The possibilities for this do exist. Although general forage reserves per head of cattle are somewhat smaller than last year, farms have more concentrates, fodder root crops, silage and haylage. Spring is a time for increasing milk yield and these feeds are best suited to increasing the productivity of primapara cows. Kolkhozes and sovkhozes have built tens of thousands of feed shops and feed kitchens. But are their possibilities being used fully everywhere?

Examinations have shown that there are still frequent cases of violations of feed delivery schedules to farms, complexes and poultry factories and of interruptions in water supply. The work of feed shops is unsatisfactory--the absence of the necessary discipline and order resulted in a drop in farm productivity in a significant number of enterprises. The low level of veterinary and zootechnical work in Rybinskiy and several other rayons of Krasnoyarsk Kray resulted in a decrease in milk and meat productivity. Due to poorly-organized milking, daily milk yield of cows turned out to be lower than last year's in a number of enterprises of Novosibirsk Oblast.

Livestock raising is a branch that affects everyone's interests; for this reason its development must be our common concern. Much depends on the partners of village workers within the agro-industrial complex. It is their task to guarantee the uninterrupted supply of energy to farms, the unfailing work of equipment and the timely delivery of mixed feeds and feed supplements. It is essential to totally eliminate losses of livestock products during shipment, reception and processing and to provide branch workers with good special clothing and model market, everyday and medical services. Because of greater flooding and worse spring road conditions than usual we must send farms all feed found in meadows and on fields in the shortest possible time. Here we cannot do without the help of Sel'khoztekhnika [Agricultural Equipment Association] organizations and leading enterprises.

Kolkhoz and sovkhoz specialists are given a special responsibility. In most enterprises professionally-trained people devoted to their jobs work as zootechnologists. Increasing their responsibility and giving them the right to determine and form technological policies for branch development means simultaneously increasing the responsibility of technologists in livestock raising for the condition of the farm, for fulfilling plans and for the end results of work. Purely subjective decision-making on the part of directors of enterprises and of workers of soviet and party organs who ignore the opinions of specialists, which still exists, is completely intolerable. At the same time we must remember that methods and devices approved by science and practice must be introduced--managing the branch at the highest level of scientific-technical progress is a matter of honor for any zootechnologist.

The most effective aid and support must be given to workers of the veterinary service. It would be difficult to overestimate their role and significance in

preserving the livestock herd, especially calves, in increasing the productivity of animals and consequently in increasing the production and sale of livestock products to the state. Helping them to treat livestock while adhering strictly to their advice and recommendations means greatly guaranteeing production growth and high production quality. Only a healthy herd can be highly productive.

To coordinate the efforts of specialists of all profiles better and to orient them toward solving immediate problems and toward actively utilizing scientific-technical achievements for the intensification of livestock raising--this is an important area of work for directors of enterprises and RAPO [Rayon Agro-Industrial Association] councils.

To successfully complete the wintering of livestock, to fulfill and overfulfill plans on the sale of farm products to the state and to make a worthy contribution to the country's feed resources--these are important goals for livestock farmers, and they must be dealt with in a consistent and purposeful manner.

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PROBLEMS IN APPLICATION OF NEW DAIRY EQUIPMENT

Moscow SEL'SKAYA ZHIZN' in Russian 14 Apr 85 p 2

[Article by V. Syrovatka, director of VIESKh [All-Union Scientific Research Institute of Rural Electrification] and doctor of technical sciences and by Yu. Tsoy, department director and candidate of technical sciences: "In the Farm Prospectus as Well/Problems in Technical Progress"]

[Text] Although the level of complex mechanization in dairy cattle raising has practically doubled during the last decade, on half the farms some of the work is still carried out manually. Saturating farms with equipment has significantly eased the labor of milkmaids and cattle workers and has made it more attractive and less stressful. But labor expenditures for the production of each quintal of milk decreased only slightly and now comprise an average of 8-9 man-hours.

Of course such negative tendencies cannot be explained by only one cause. The low return on the means of mechanization in dairy livestock raising has been affected by the unsatisfactory work of enterprises of Minzhivmash [Ministry of Machine Building for the Livestock Industry], which from one year to the next does not satisfy farm needs for various types of new equipment. Low quality, the lack of dependability of many assembly-line machines and the lack of adherence to accepted technologies, forms of labor organization, and methods of servicing animals have their effect; as a result the potential of new equipment is not always realized in practice. Still, in our opinion the main cause is the deep-rooted tendency to utilize habitual, but outdated and unproductive technologies and technical resources.

As long ago as the early 1960's industry assimilated the production of a complex of machines that included milk conduits, mobile and stationary feed distributors and manure removal transporters. Two regular cowsheds for 200 cows each were serviced by eight milkmaids, six cattle workers and one machine-operator and fodder storeman. Thus each worker, including substitutes, worked with no more than 14-15 animals. Over the course of 20 years industry has improved this machinery. But no noticeable changes in labor productivity have occurred. Let us look at milking, for example. In comparison with the first models, modern assembly-line milking equipment of the milk conduit type has become more convenient to operate, the probability of a cow's developing mastitis has decreased and labor expenditures to carry

out individual operations dropped. The technical level of both feed-distributors and manure-removal transporters has risen. Nevertheless, as previously, every 400 cows are serviced by eight milkmaids, six cattle workers and a machine-operator and fodder storeman. At the same time, all of these improvements have noticeably increased the cost of technology and have complicated design. As a result there was a growth in expenditures for technical servicing and an increase in the cost of production.

Simple calculations show that in order to decrease the number of workers servicing cows by one individual it is essential to decrease the time needed to service one cow by 2.5 minutes per day. With milking twice a day, a milkmaid spends 8.4 minutes per day on each cow, of which 4.6 minutes are spent specifically in milking. Thus, in order to free one person by means of improving the milking apparatus it is essential to decrease labor expenditures in milking by over half. This is hardly possible for milking equipment of the milk conduit type. After all, even when this equipment was improved labor expenditures to carry out the remaining operations stayed at the previous level.

The same can be said for the system of manure removal. In actuality, the transporter removes manure only from the canal, just as before. The new, improved and more dependable TSN-160 did not decrease labor expenditures for the most labor-intensive operation--the cleaning of stalls and manure and feed conduits. The number of cattle workers has also remained as before.

Meanwhile, if we believe the brochures with descriptions of the new technology for dairy farms, the economic effectiveness resulting from introducing it is very high. Does this mean that the brochures are lying? No, of course not; it is just that the methodology used to determine effectiveness is not correct. What is it that happens? The basic component and measure of economic effectiveness due to the introduction of new equipment is the drop in standard labor expenditures while fulfilling a specific operation per animal or per unit of production. No consideration is made at all of whether service personnel have decreased the use of this equipment (in coordination with other equipment) in the course of their work. And, as we have found, this by no means occurs in every case.

The price of a new machine as well as, most importantly, the size of the material incentive fund for its developers, depends on the level of "economic effectiveness" calculated in the aforementioned manner. The same type of methodology is utilized in equipment testing, when the potential effectiveness of a single machine is evaluated without examining the specific conditions and technology that are necessary to realize this effect in the form of a decrease in the number of workers.

We feel that it is time to set up a different order. If the use of new technology does not result in a curtailment of personnel as compared to the base variant, the estimated economic effectiveness should not be considered at all when determining the cost of the machine. It is essential to interest scientists and designers materially in developing fundamentally new machines and technology that will achieve a real savings in labor resources in livestock raising.

In determining the directions for technological development in dairy cattle raising more attention should be paid to the development of machines and equipment for the mechanization of auxiliary manual operations which now comprise up to one-half of all labor expenditures to service animals. Relatively small farms now supply a significant if not the greater part of production within the branch. But no technology at all is produced for such enterprises. It becomes necessary for them to use, quite ineffectively, powerful and highly-productive machines that have been earmarked for large farms.

Within a system of machines it would be expedient to establish the need for equipment on the basis of joint, comprehensive, promising plans of technical reequipping of the branch developed within a framework of the agro-industrial complex. In this case the machine system will actually become the basis for creating annual and five-year plans by enterprises of the Ministry of Equipment Building for the Livestock Industry, Goskomsel'khoztekhnika [State Committee of the Agricultural Equipment Association] and other departments of the APK [Agro-Industrial Complex]. Stable plans on the production and delivery of equipment will enable us to significantly improve quality and dependability and to decrease the cost of delivered machines and equipment by means of production concentration of technologically-similar products. At the same time there will be an increase in the responsibility of all ministries and departments with regard to the technical level and effectiveness of the new equipment and an acceleration of the transition of dairy cattle raising to industrial technology.

On farms which practice tethered upkeep of dairy cattle the largest category of workers is milkmaids. This is the result of the use of unproductive milking equipment for milking in stalls. There is only one answer--on every farm to introduce as quickly as possible the milking of cows in special halls equipped with highly productive Tandem, Yelochka and Karusel' milking equipment.

On farms with untethered upkeep of cows there is no such problem involving the organization of milking. In places where cows are tied up work is complicated by the fact that it becomes necessary to untie and retie a large number of animals. We feel that the answer to the problem is the widespread use of stall equipment with automatic ties. As our research as well as the experience of many enterprises, particularly of Pamyat' Il'iicha Kolkhoz of Shchelkovskiy Rayon, Moscow Oblast, which was described in detail in the 6 January issue of SEL'SKAYA ZHIZN', have convincingly shown, this technology enables us to increase the load per production worker (with a consideration of substitutes) to 23-26 and more cows on the farm as a whole, as compared to 14-16 on the best farms utilizing traditional methods. Every operator of machine milking can serve 100-200 cows.

Gipronisel'skhoz [All-Union Planning and Scientific Research Institute for the Planning of Standard and Experimental Agricultural Production Centers and Establishments for Storing and Processing Grain], together with VIESKh, has developed a model plan for a dairy farm employing the new technology. It would not be difficult to introduce on any farm with standard facilities for

100 and 200 cows. Here renovation expenditures do not exceed 350 rubles per cattle place. The only thing that hinders work is the shortage of stall equipment with OSP-F-26 automatic ties. It is time for the enterprises of Minzhivmash to assimilate its production and for Goskomsel'khoztekhnika to secure the delivery of machine complexes for newly-renovated farms.

Effective technologies for milk production have been developed for most zones in the country. It is essential to introduce them widely into practice more rapidly.

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ROLE OF SCIENCE IN REDUCING MEAT, DAIRY INDUSTRY LOSS

Moscow ZHIVOTNOVODSTVO in Russian No 2, Feb 85 pp 26-27

[Article by A. T. Mysik, doctor of agricultural sciences, and S. M. Belova, candidate of chemical sciences, Council for the Coordination of Scientific Research Work in Improving the Quality of Animal Products, Presidium, VASKhNIL [All Union Academy of Agricultural Sciences] :"The Tasks of Science in Improving Quality and Reducing Losses"]

[Text] In accordance with the Food Program, improvements are being made in the organization of the procurement of livestock, milk and other animal products, in the expansion of the network of procurement enterprises and points in order to minimize their distance from production sites. There is an enhancement of procurement organization and enterprise responsibility for product's prompt reception and spoilage prevention. Measures are being taken to shift the reception of livestock and milk directly to farms, to improve the assortment and quality of meat and dairy products. An All-Union Conference in Tartu, Estonian SSR, covered questions in reducing the losses and preserving the quality of animal products at all stages of their production, procurement, primary processing, transportation, storage, subsequent processing and sales. The following thematic selection examines ways of reducing animal product losses and preserving quality.

Increases in milk production are given an important place in the Food Program. By the end of the 11th Five-Year Plan per capita consumption should increase to 318 kg annually. Simultaneously, there will be improvements in milk quality and reductions in losses.

Last year 80.3 percent of the milk sold by kolkhozes and sovkhozes was first grade, while in 1983 only 75 percent was. The share of nongraded milk was reduced from 6 percent in 1980 to 5.3 percent in 1984. There were increased deliveries of chilled milk -- from 38.6 percent in 1980 to 49.3 percent in 1984. Milk fat content increased to 3.54 percent.

These milk quality improvements are mainly explained by improved work standards at animal farms and by more thorough scientific research. Scientists at the Estonian NIIZhV [Scientific Research Institute for Animal Raising] have especially fruitful ties with production. Jointly with specialists from the Petrovskiy pedigree stock facility in Leningrad Oblast, scientists from the VNIIRGZh [Possibly: All Union NII for Animal Genetics] have prepared materials for the approval of a new type of spotted black cow, bred from Holstein-Frisian bulls. As a result, 1,078 cows produced 6,566 kg of milk with 3.81 percent fat content.

VIZh [All Union Institute for Animal Raising] and collaborating institutes have done positive work on establishing the reasons for losses and the norms for the natural loss of milk during milking, filtering, cooling and transporting. This work shows that milk losses during milking alone are 1.4 percent. In terms of gross output this means that hundreds of thousands of tons of this valuable food product are lost.

Work is being completed on a high speed method for determining milk quality. The Agropribor NPO [Scientific Production Association], VNIMI [All Union Scientific Institute for the Dairy Industry], Estonian NIIZhV and VNIIRGZh have developed, and industry has mastered the production of instruments for determining the fat and protein content of milk. The use of these instruments will raise the labor productivity of laboratory workers, improve the sanitary qualities of milk and reduce losses.

Interesting research on improving milk quality and protecting it at all stages of production, procurement and delivery to customers is being done by scientists at the NIIZh for the Forest Steppe and Poles'ye of the Ukrainian SSR, the Kirgiz NPO, the Northern NIIZh, Azerbaijan NIIZh, KazNITIZh [not further identified] and other zonal institutes in the VASKhNIL and USSR Ministry of Agriculture systems and at VNIMI [All Union Scientific Research Institute for the Dairy Industry], UkrNIImyasmolprom [Ukrainian NII for the Meat and Dairy Industry] and the TSKhA [Timiryazev Academy of Agricultural Sciences]

The sizable unutilized reserves must be taken into account to reduce milk losses and improve its quality. The fact is that agriculture and industry use part of the milk irrationally, there is unjustifiably high milk consumption by farm animals, and milk processing industry capacity is lagging behind agriculture's production potentials.

Milk is lost and its quality reduced through untimely transport. This rises sharply with increases in the haulage radius. When kolkhozes and sovkhozes deliver milk directly to sites and it is hauled by specialized transport equipment of the dairy industry, not only are production outlays reduced, but so are losses and spoilage. However, such operations are not satisfactorily organized in a number of union republics and RSFSR oblasts.

The condition of livestock arriving at state herds is gradually improving. At present the purchases of first category cattle and sheep and first and second category pigs amount to 61, 22 and 74 percent of all purchases.

At the same time, we cannot yet be satisfied with these successes. There are sizable meat losses because low weight (the average live weight is less than 300 kg) young animals are still arriving for delivery. In addition to young animals arriving for state purchases, a large number of cattle with an average live weight of 147 kg are sent to slaughter for various purposes, for example, intrafarm consumption, market sales, etc. The reasons for meat losses are: failure to feed animals the necessary amounts and balance of feeds, insufficient selection of animals for disease and stress resistance, the low level of herd reproduction, failure to observe the optimal preslaughter periods of animal maintenance, the long distance transport of animals and shortcomings in technology for processing animals and storing meat.

One of the main reserves for increasing beef production, reducing losses and improving its quality is the organization of the intensive raising and feeding of young cattle. This is supported by research done by scientists at VIZh, NIIZh for the Forest Steppe and the Poles'ye of the UkrSSR and at SibNIPTIZh. With intensive raising, cattle weight not only reaches 500 kg in 15 - 18 months, but also results in carcasses with better protein to fat ratios.

Research done by the Poltava NIIS [NII for Swine Raising], VIZh, NIIZh for the Forest Steppe and the Poles'ye of the UkrSSR, EstNIIZhV and others has shown that pig production can be increased, losses reduced and quality improved primarily through the branch's intensification, improvements in average daily live weight gain, reductions in feed outlays per unit of output, the development of new highly productive breeds, types and lines of pigs for meat, the extensive application of heterosis in commercial crossing and hybridization and reductions in the time it takes for animals to reach 115 - 120 kg.

Reductions in the duration of the preslaughter period and in time of transportation to processing enterprises as well as the further development of direct ties are important reserves for reducing meat losses. A reduction in the present norms for preslaughter holding of cattle at meat combines would result in more than 50,000 tons of additional meat just in the RSFSR. There are equally large reserves in the reduction of cattle transportation time. Because cattle are frequently hauled more than 150 kilometers, annual meat losses in the RSFSR are about 100,000 tons, causing kolkhozes and sovkhozes to annually loose about one half billion rubles. In Belorussia, Estonia and Lithuania, the establishment of direct ties between farms and meat combines has substantially increased meat product output thanks to the elimination of live weight losses at bases and en route. The average duration of the preslaughter holding of cattle was reduced from 3.5 to 0.8 days, that of pigs from 2.8 to 0.8 days and of small horned cattle from 5 to 1.5 days.

VIZh and VNIIIMP have conducted joint research to evaluate the efficiency of existing methods for cattle procurement (by live weight or weight and quality of carcass). However, scientists have not come to a single conclusion about the advisability of using either livestock procurement system. This is evidence individual scientists and specialists are advocating purely departmental interests. At the same time, it is known that this problem, of national economic importance, requires immediate solutions and, consequently, the unified opinion of scientists.

Poultry raising has attained high and stable production growth rates. Not only has output increased, but quality has improved.

However, poultry product losses are still large. The lack of polymer film packages for poultry (only eight percent of output is so wrapped) leads to considerable losses of poultry meat. Also, meat quality deteriorates during storage.

The reasons for losses in poultry live weight and reductions in quality are: insufficiently balanced rations, bird diseases and injuries occurring while they are kept in cages, when they are transferred and shipped and the sales of nondressed, unpackaged birds.

Specialists have found that to avoid losses it is most rational to transport birds for slaughter in the same cages in which they were raised. It is also advisable to reduce broiler growing time to seven weeks, as this helps reduce sores.

There are still large losses of wool, hides and furs. Scientists at VNIIOK [All Union NII for Sheep and Goat Breeding] and the North Caucasus NIIZh are working on reducing losses and protecting product quality (the development and introduction of a system for monitoring wool quality, the widespread introduction of breeding groups of the mountain corridel sheep, increasing wool shear by 20 - 25 percent).

Specialists at VIZh and collaborating institutes have done considerable work on developing norms for natural wool losses in various zones of the country during shedding, fall-out, shearing, weed removal, grading, storage and transportation. On the basis of this research they have proposed norms for wool loss. It was established that during growth, sheep wool loss reaches 0.86 percent, during weed removal -- 1.26 percent, during shearing and grading -- 3.0 percent and during storage and transport -- up to 1 percent. They also determined indicators for losses and natural droppage of sheep and camel wool and goat fur.

Basic directions must be worked out for joint research during the 12th Five-Year Plan. Provisions should be made for the more active efforts of scientific institutions within the framework of the APK. This complicates coordination somewhat, but will help improve development work quality and solve problems in preserving animal products.

The key tasks for scientific institutions during 1985 are: the improvement of existing and the development of new breeds, types and lines of cattle, pigs and sheep resistant to diseases and stress, suitable for industrial methods of animal raising, and producing milk and meat with increased protein and fat content and durable egg shells, with improved processing properties meeting the requirements of various branches of the processing industry; the improvement of technology for the milking and primary processing of milk at farms which will yield top grade chilled milk, for raising livestock and poultry to produce children's food products; the development of standardized methods for monitoring animal product quality; recommendations for reducing animal product losses

at all stages of production, procurement, transport and processing; the improvement of systems for procuring animal products; the creation of low waste or waste-free technologies for processing animal products, making full and rational use of all components to produce food products and animal feeds.

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ELIMINATING LOSS, IMPROVING QUALITY IN POULTRY RAISING

Moscow ZHIVOTNOVODSTVO in Russian No 2, Feb 85 pp 38-40

[Article by T. A. Stolyar, professor, VNIITIP [All Union Scientific Research and Technological Institute for Poultry Raising], and N. S. Tsvetkova, candidate of agricultural sciences, scientist-secretary, Commission for the Quality of Animal Products, Presidium, VASKhNIL [All Union Academy of Agricultural Sciences imeni V. I. Lenin]: "More High Quality Poultry Products"]

[Text] Poultry raising is one of the most dynamically developing branches of agriculture. Compared to 1965, by 1983 egg production in the country had increased 2.6 fold and poultry meat production 3.8 fold. During this period egg consumption per capita increased from 126 to 253, and poultry meat consumption from 3 to 9.5 kg (slaughter weight). The scientifically based consumption norms are 256 eggs and 10 - 14 kg respectively.

The conversion of the branch to an industrial basis has assured the gradual improvement of qualitative indicators and raised its general economic efficiency. Thus, egg production per layer hen increased from 145 eggs in 1965 to 221 in 1983 and live weight per broiler increased from 737 grams to 1,268 grams.

The share of first category poultry meat production increased from 43.5 percent in 1980 to 45.2 percent in 1983, while first category table eggs went from 24.7 percent in 1975 to 35.3 percent in 1983.

The industrialization of poultry raising has made it possible to avoid the seasonality in egg and poultry meat production and procurement. This has assured an even year-round flow in poultry product supplies to the population of cities and industrial centers. Poultry egg and meat productivity is being increased through the use of modern highly productive cross hybrids and the use of efficient technology and fully balanced mixed feeds. However, the genetic potential is far from completely utilized and there are still great losses in poultry raising.

In 1983 at enterprises in the USSR Ptitseprom [Poultry Industry] the average annual egg production per layer hen was 221 eggs, in the Estonian SSR -- 254 eggs, while in the Turkmen SSR it was 129 eggs and in the Armenian SSR, 167

eggs. In the Latvian SSR, after 53 - 56 days, the average live weight per broiler reached 1,775 grams, in the Estonian SSR -- 1,736 grams, while in the Georgian SSR, after a longer feeding time, it was only 995 grams and in the Turkmen SSR -- 1,000 grams.

In some zones of the country, feed consumption per unit of output is still high. While farms in Estonian SSR Agroprom use 185 feed units per 100 kg of weight gain, at enterprises in the Turkmen SSR they use 368 feed units; in the Latvian SSR it takes 294 feed units for a 100 kg weight gain in chicks being raised for meat, while in the Turkmen SSR it takes 930 feed units.

Poultry product quality does not meet the increasing requirements of producers and consumers. At many farms the marketability of carcasses is low and there are losses in transporting live and slaughtered birds.

The processing industry is slowly converting to full dressing. In 1983 about 20 percent of birds were dressed. As is known, the production of poultry in a semidressed form leads to losses of raw materials for protein feeds and reduces poultry quality during storage.

Poultry carcasses are now produced mainly in a semidressed form. The head, legs and a large part of the innards are not removed. As a rule, housewives simply throw them away. Consequently, with this form of dressing, thousands of tons of protein feeds are lost, while at the same time there are not enough proteins of animal origin in animal feed. Wastes from complete dressing can be used to produce meat and bone meal, the production of which uses 8 percent of the live weight of processed birds. Moreover, the production of semidressed birds does not guarantee the epidemiological and epizootic safety of the product.

The conversion to complete dressing is economically advisable and necessary from a sanitary perspective.

However, to a considerable degree this is hindered by the lack of equipment for all the operations in slaughtering and processing poultry in accordance with existing instructions. The development and improvement of poultry processing equipment is a duty of the "Kompleks" NPO [Scientific Production Association] in the USSR Ministry of the Meat and Dairy Industry. It is still not completely solving this problem and has not seen to the extensive introduction of equipment which has already been developed.

Attention is not yet given to the packaging of carcasses, which will also reduce losses and preserve the biological and sanitary qualities of poultry meat.

Among the reasons delaying reductions in losses during production, storage and processing is the insufficient effectiveness of studies into the sources of these losses and the development of measures to prevent and reduce them. There is not enough comprehensive research by scientists in all branches of the agro-industrial complex. This leads to incomplete developments and retards the introduction of results into production.

Reductions in losses and the preservation of egg and meat quality involve solutions to many scientific and practical tasks in poultry breeding, feeding and raising and in product transportation, processing and storage.

As production intensification increases, bird disease and stress resistance will be considered major characteristics assuring high quality products. Breeders at VNIIRGZh [not further identified] are doing good work here.

One of the main commercial qualities of dressed poultry is its homogeneity with regard to weight, size and shape. The selection of poultry for homogeneity with regard to live weight plays a major role in this.

Moreover, the separate raising of layer hens and chickens for meat also results in broiler homogeneity. If the animals are raised together, weight gain for layer hens is suppressed. If raised separately in cages, the live weight of meat animals increases by 3 percent, that of layer hens by 5 percent and output of category I carcasses increases by 5 - 7 percent.

Breeders have the problem of creating autosexual [avtoseksnyye] crosses of poultry. In day old chicks these crosses will make it possible to quickly and safely determine sex for their separate raising (VNITIP, UNIIP [Ukrainian Scientific Research Institute for Poultry Raising]).

Scientists at VNIIRGZh are selecting for improved meat qualities -- the creation of a line hen with increased protein content in meat (23 - 24 percent) without deterioration in taste and processing properties. They have now proven the genetic causes for protein content. Increasing it by only 0.5 percent in broiler meat will result in about 5 kg of additional animal protein per ton of product.

The work of scientists at UNIIP, and the Kazakh and Belorussian ZOSP [Zonal Poultry Experimental Stations] in duck breeding is directed towards reducing fat content. The domestic gene pool is used as the maternal stock for crossing with musk drakes. The hybrid mulards obtained contain 38 percent more muscle and 34.4 percent less fat than other breeds. Carcasses are 18 - 20 percent fat.

Recently, cages have been widely used for raising broilers. However, one of the problems in this type of raising is sores in the carina, spoiling their commercial appearance. Many researchers are studying ways of reducing such sores. Breeders are selecting birds not predisposed to sore formation and specialists are improving the gratings of cage batteries using softer materials.

Many researchers' work proves the advisability of reducing broiler raising time to seven weeks to avoid sores.

Proper feed use makes it possible to obtain meat of the necessary quality at high production efficiency.

The country's progressive farms use 150 - 160 feed units to produce 1,000 eggs and 290 - 310 feed units per 100 kg of broiler live weight gain. Many farms in the Central Asian and Transcaucasus republics use twice as much.

There are very diverse reasons for such high feed costs in poultry product output. The primary ones are the unsatisfactory feed base, shortages of some types of essential feeds, especially high protein ones, synthetic amino acids, a number of vitamins and trace elements. This limits the feed industry's possibilities for producing full value mixed feeds meeting birds' physiological requirements. At the same time, farms are not using all reserves for feed savings, leading to increases in production costs and reductions in its efficiency.

Problems in improving feed use efficiency and in reducing feed losses are being solved by scientists at many institutes. Thus, at VNITIP, UNIIP, MVA, TSKhA [Timiryazev Academy] and others, they are constantly improving mixed feed formulas, preparation technology, norms for bird requirements for nutrients, biologically and metabolically active substances, feeding practices and technology for maintaining and feeding birds which will eliminate losses.

Meat productivity is now evaluated by live weight, daily weight gain, slaughter output, physico-chemical indicators for meat quality and feed use per 1 kg of weight gain. However, these indicators still do not give an objective evaluation of birds with respect to the efficiency of converting feed nutrients into products and do not describe their capabilities of maximizing protein production.

The improved conversion of feed nutrients into product nutrients (eggs and meat), especially edible protein, is a major task for zootechnical science. However, it is not yet being worked on everywhere.

The optimal preslaughter period helps preserve poultry meat qualities and reduce losses. In preparing birds for slaughter they are kept without feeding for some time in order to free their digestive tracts of feed wastes. The birds should have free access to water. The length of this preslaughter period is determined by the organism's physiological characteristics. The prolonged lack of feed, and more importantly, of water, reduces their fat, water and glycogen content and increases the concentration of hydrogen ions, making the birds more succulent and tender.

Work at the "Kompleks" NPO and VNITIP has shown the optimal preslaughter period: for broilers it is 6 - 8 hours, for turkey hens, 7, and for young and adult ducks and geese, 4 - 6 hours. The proper catching and confinement of birds reduces losses and preserves quality. Transportation is also an important process, requiring specific conditions, the violation of which can lead to sizable losses in live weight, to injuries and deterioration. Research at the "Kompleks" NPO has established that up to 30 percent of defects are due to injuries and fractures during catching, loading and unloading. Cages which assure normal conditions for birds and which are easy to handle are not yet in production. Experimental models of such cages have been made.

Poultry meat losses increase when unpacked carcasses are stored. Research at the "Kompleks" NPO shows that packing dressed birds in polymer film better protects the meat and reduces natural spoilage by 6 - 7 fold.

The development of progressive production standards is of great importance for improving qualitative indicators. It is essential to work out world-level standardized methods for monitoring processes and product quality. Scientifically based prices are of great importance in improving product quality.

The preservation and improvement of poultry product quality and reductions in losses are a complex task which should be solved at all links in the technological processes of raw material production, processing and storage.

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DEVELOP POTENTIAL OF MOLDAVIAN DAIRY CATTLE RAISING

Sector Shortcomings, Tasks

Kishinev SEL'SKOYE KHOZYAYSTVO MOLDAVII in Russian No 3, Mar 85 pp 2-3

[Article: "Utilizing the Potential of Dairy Cattle Breeding More Fully"]

[Text] The year 1984 was a difficult one for the country as well as for the republic in terms of weather conditions. Nevertheless, farm and field workers achieved adequate results. The republic has dealt successfully with plans for the sale of sunflower seed, vegetables, potatoes, grapes and tobacco. Last year plans and socialist obligations related to the sale of livestock products were fulfilled ahead of schedule. Annual milk output per cow equalled 3,200 kilograms. With fewer feed expenditures average daily weight gain of feeder cattle and hogs increased. The total volume of gross agricultural production output for last year equalled about 3.2 billion rubles. This is the highest result in the history of the republic.

Last year, as before, livestock raising developed successfully. However, in the oblast the most labor-intensive and complex is dairy cattle raising. With the concentration of meat and egg production in large complexes and poultry factories, dairy cattle raising has remained a part of every kolkhoz, sovkhoz and sovkhoz-plant.

The Central Committee of the Moldavian CP and the republic's government are focusing careful attention on the development of dairy cattle raising. At the end of last year zonal meetings were conducted with branch workers with the participation of comrade S. K. Grossu, First Secretary of the Central Committee of the Moldavian CP.

In the republic as a whole a considerable amount has been accomplished in recent years to further branch development. Nevertheless, as noted at the meeting, the results would have been significantly better if all sovkhozes, kolkhozes and sovkhoz-plants had organized the management of dairy cattle breeding on the level of leading enterprises. The base of dairy cattle breeding created everywhere is utilized extremely insufficiently, comprehensive solutions to problems of intensifying the branch are not facilitated, effective measures are not being taken in a number of enterprises and rayons to more fully utilize the possibilities for increasing the productivity of animals and the developed genetic potential of the dairy herd is not being utilized fully.

Last year in the enterprises of 25 rayons the productivity of cows was lower than the republic average. About 200 farms and complexes produced fewer than 3,000 kilograms of milk per cow. This is despite the fact that experience confirms that all republic enterprises have at their disposal adequate conditions for the development of dairy cattle raising. At the same time, there are many reserves in terms of the training, distribution and use of cadres. Only this can assure success. This work has been organized well in Brichanskiy Rayon. Here each year on 100 hectares of agricultural lands over 750 quintals of milk are produced, the highest cow productivity--over 3,800 kilograms--has been achieved, and a high level of branch profitability is being secured. The reverse situation also exists. In the enterprises of Glodyanskiy and Dondyushanskiy rayons the productivity of the dairy herd is 650-660 kilograms lower than in Brichanskiy Rayon.

It can be said that the natural-climatic conditions of Drokiyevskiy and Ryshkanskiy rayons are the same. There is also almost no difference in the breed composition of the dairy herd. However, there is a considerable difference between these rayons with regard to milk yield. According to last year's results it equalled over 250 kilograms of milk. The enterprises of Drokiyevskiy Rayon produce 70 quintals of milk more per 100 hectares of agricultural lands than Ryshkanskiy Rayon. There is practically no difference in conditions in Kolkhoz imeni Kirov and Yatsa Nouy Kolkhoz of Ryshkanskiy Rayon--the same land, the same facilities, the same breed composition of cows, and the same amount of feed stockpiled per standard head of cattle. However, according to last year's results, in the former 3,470 kilograms of milk were produced and in the latter--2,547, or 923 kilograms fewer.

In Faleshtskiy Rayon, in Kolkhoz imeni Suvorov each cow produced 3,569 kilograms of milk; in Kolkhoz imeni V. Glavan--2,559, or 1,010 kilograms fewer. In Glodyanskiy Rayon, the difference in productivity of the dairy herd between Zarya Kommunizma Kolkhoz and Moldova Sochialiste Kolkhoz equals 971 kilograms.

The only thing left to add is that this type of variability in the productivity of livestock between rayons and enterprises which find themselves in the same conditions can in no way be justified. It can be explained only by differences in the attitude toward work on the part of directors and specialists and branch workers themselves and by different levels of demandingness and organizational work by party, soviet and management organs and by directors and specialists of enterprises.

Suffice it to say that according to results for 4 years of the five-year plan the republic owes the state 82,000 tons of milk. Great lags have been tolerated in the northern zone. The enterprises of this region underproduced by 26,500 tons. Especially great debts have been incurred by the enterprises of Dondyushanskiy, Glodyanskiy, Ryshkanskiy and Sorokskiy Rayons, which did not fulfill their quotas by 4,718-9,666 tons of milk during 4 years of the five-year plan. In this zone only two rayons--Brichanskiy and Oknitskiy--fulfilled their quotas for 4 years of the five-year plan, exceeding the plan by 6,434 and 3,043 tons respectively.

In the republic intensive work is being done to develop a new highly-productive Moldavian Black-Spotted breed of cattle with a milk yield of 5,500-6,000 kilograms per cow. According to bonitation data, at the present time in the republic over 80 percent of cows and practically all replacement calves belong to Black Spotted mixtures of various generations.

Thorough breeding-pedigree work with the herd, coordinated with a stable feed base, work to strengthen technological and work discipline, and improvements in new forms of labor organization and wages for livestock farmers, is being carried out in Brichanskiy, Yedinetskiy and Oknitskiy rayons. Last year 3,430-3,540 kilograms of milk were produced here. In Malayeshtskiy Sovkhoz of Orgeyevskiy Rayon, Mikhalašanskiy Sovkhoz of Oknitskiy Rayon, the head enterprise of the Dnestr NPO [Scientific Production Organization] of Slobodzeyskiy Rayon and 19 S"yezd KPSS and Rassvet kolkhozes of Brichanskiy Rayon the productivity of cows surpassed the 5,000 kilogram level last year.

Interfarm complexes for raising heifers have played an important role in the development of dairy cattle raising. During the last 5 years they have raised over 260,000 heifers, which enabled us to renew and qualitatively improve the republic's dairy herd. In the last year alone participating enterprises raised about 57,000 heifers, which is 1,300 more than in 1983.

However, the work that has been carried out in many respects still does not correspond to the demands placed before the republic's APK [Agro-Industrial Complex] workers regarding the development of dairy cattle raising. Last year average daily weight gain of heifers equalled only 311 grams at Glodyanskij Complex for Raising Heifers. The live weight of heifers returned to enterprises dropped. Their live weight comprised only 387 kilograms. This clearly does not meet the requirements for raising highly productive cows. It is no accident that this rayon tolerates chronic lags in dairy cattle raising.

Extremely important for the development of a highly productive dairy herd is the preparation of heifers for calving and increasing the milk yield of primaparas. The republic's livestock farmers have accumulated a considerable amount of experience in this area.

This work is organized well in Kolkhoz imeni Kotovskiy of Drokiyevskiy Rayon, Kolkhoz imeni Lenin of Yedinetskiy Rayon, Kolkhoz imeni Frunze of Oknitskiy Rayon, Agricultural Sovkhoz-Technical School imeni V. I. Lenin of Dondyushanskiy Rayon and others. The productivity of cows during the first lactation reaches 3,540 kilograms of milk here.

The situation involving dairy cattle raising is poor in Luch, Progress and imeni Kuvorov kolkhozes of Sorokskiy Rayon, in Sovetskaya Moldaviya and Moldova Sochialise kolkhozes of Dondyushanskiy Rayon and in other rayons. Here heifers are not prepared for calving and no effort is made to increase their milk yield, the productivity of primaparas is low, and the herd is culled prematurely. In Mereshovka Sovkhoz of Oknitskiy Rayon, Ovoshchevod Sovkhoz of Sorokskiy Rayon and Rassvet and Pogranichnik kolkhozes of Ryshanskiy Rayon last year only 62-76 calves were obtained per 100 cows, and in 22 S"yezd KPSS of Oknitskiy Rayon about half the cows did not bear young.

There is no doubt that cadres play the main role in raising the effectiveness of herd reproduction. There are over 900 technologists on artificial insemination working in the republic's enterprises. But unfortunately not all of them deal conscientiously with their obligations. This is why a low output of calves per maternal herd is tolerated.

Great losses are incurred every year in the republic's enterprises from the death and forced slaughter of calves. Last year over 30,000 head of cattle perished. Especially large numbers died in Orgeyevskiy, Lazovskiy and Teleneshtskiy rayons. In the enterprises of the republic's northern zone alone it was necessary to slaughter over 14,000 head of cattle with an average live weight of 123 kilograms per head last year. This is obviously epizootic disease.

The largest amount of epizootic disease is tolerated in places where the rules of sanitary hygiene and of microclimate are grossly violated, where the level of professional training is low and where group methods of treating animals with the help of aerosols, disinfectants and medicinal and prophylactic means are being introduced slowly.

This is the most responsible period for livestock farmers--the overwintering of cattle is continuing. It is very important to consolidate and develop that which has been achieved in complexes and farms, and most importantly --to avoid drops in the production and procurement of livestock products.

We regret that in a number of enterprises overwintering began poorly and continues on the same level today. Great mismanagement is tolerated in livestock raising in Kodryanka Sovkhoz-Plant of Strashenskiy Rayon, Sipoteny Sovkhoz-Plant of Kalarashskiy Rayon, the head enterprise of Gibrid NPO of Kriulyanskiy Rayon, Tabakovod Sovkhoz of Rezinskiy Rayon, 50 Let Oktyabrya Kolkhoz of Orgeyevskiy Rayon, Zarya Kommunizma Kolkhoz of Floreshetskiy Rayon and others. In these enterprises the productivity of animals is low, feed supplies are poor, and five-year plans for the production and sale to the state of animal products are interrupted. Preparations for wintering were poor, facilities are without heat, and feed shops work with interruptions or not at all. The feeding of animals is overseen not by specialists but by forage storers, drivers and herdsmen. Normal conditions do not exist for the rest of workers. Socialist obligations and competition are formal in nature, visual agitation is in a neglected state and zooveterinary courses have not been organized.

The acceleration of the transition of dairy cattle raising to an intensive path of development requires an improvement in the level not only of the material-technical base but also of economic work, the extensive introduction of collective contracts and cost accounting and the use of other economic factors.

Right now it is very important to establish real cost accounting goals for every complex and farm, to organize effective model accounts, to constantly analyze the course of production, to strictly adhere to the principle "better wages for better end results," to utilize the coefficient of labor participation skilfully and to organize the production process so as to achieve growth in production output with fewest expenditures of labor and resources on the basis of the great interest of livestock farmers.

Party organizations and APK management organs must take control of the implementation of the program to improve the breeding and productive qualities of dairy cattle and strengthen organizational and mass political work in the collectives of complexes and farms. It is essential to reinforce trained cadres of specialists and directors of the middle link, to direct communists and komsomol members into this branch and to begin effective socialist competition everywhere for the fulfillment of plans of the final year of the five-year plan and of the five-year plan as a whole and for greeting the 27th CPSU Congress in a worthy manner.

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Herd Productivity

Moscow IZVESTIYA in Russian 2 Apr 85 p 2

[Article by V. Fedoryaka, general director of the Zarya Scientific-Production Association, Moldavian SSR: "Overstepping the Boundaries"]

[Text] Not only here in Moldavia, but in traditional "dairy" zones as well the productivity of cows seemed often to butt up against an invisible boundary--3,000 kilograms and no more. Some enterprises produced more, of course. For some, this did not matter. Growth in gross milk production was achieved by means of increasing the size of the herd. This required additional manpower. Usually there was not enough of it. In this way the circle was closed.

It is possible to overstep the boundary by combining two directions--the biological (growth in productivity by means of breeding work) and the technical (complex mechanization of labor).

Some may counter that I forgot the most important link--feed. I did not. I am not refuting the well-known truth that "a cow's milk is in its mouth." But when we speak not of the personal brown cow but of a herd of let us say 1,000 head, the storyteller's introduction must be a different one. I like the one which states, "The farm begins with a scientific laboratory." I hope that I'm not exaggerating too much in this.

Today success depends on the level of the scientific foundation. After all, it has happened that mansions were built, but the response of cows to their "ferro-concrete" care was a drop in productivity. As soon as lines of automatic milking were created the cattle would come down with illnesses.

The path toward industrial technology and towards its overall assimilation turned out to be a prickly one. Only in recent years have its real possibilities become clear. With the stabilization of the herd, including cows, in 1983 the production of milk increased by 10 percent in the republic, of meat--by 14 percent; and in 1984--by 7 and 10 percent respectively. During the year before last milk yield exceeded 3,000 kilograms, and last year it reached 3,193 kilograms. Now the plan for the first quarter has been overfulfilled. There was a 7 percent increase in milk productivity.

At this point it is appropriate to once again mention feeds. We know that it is possible to produce a yield of 3,000 kilograms while using animals with a relatively low genetic potential, i.e. their potential productivity. The quality of rations may be judged by only 5-6 indicators of nutritive value. When we are speaking about a milk yield of 4,000 kilograms and more, both highly productive livestock and a special "kitchen" are required.

All of these questions are within the field of vision of our scientific-production association, which is one of several within the system of the republic's agricultural ministry. The NPO [Scientific Production Association] was created 8 years ago. We made mistakes and errors, but we also gained experience.

The NPO includes the scientific-research institute of livestock raising and veterinary science, a republic breeding-pedigree center, an association for the procurement and sale of breeding stock and 16 sovkhozes. There are over 8,000 people working here, including almost 700 diploma specialists and 60 scientists.

As you can see, the concentration of efforts is solid. A developed production base corresponds to it. On our farms there are about 30,000 head of cattle and many other animals.

What innovations have been made in research and in introducing research results into practice? First of all, before the NPO existed, the institute primarily studied individual elements of production and proposed ways to improve them. Now the most important thing is the comprehensive solution to great problems. Thus, seven subdivisions of the institute are involved in the development and improvement of the technology for obtaining milk. Breeders have focused their efforts at raising the productivity and adaptability to machine milking of Black Spotted cattle. The neighboring laboratory is working on improving the reproductive capabilities of the breed. This work is being implemented together with scientists from the MSSR AS [Academy of Sciences] and has been awarded the Moldavian State Prize.

Workers of the technology laboratory and of the feed department are solving problems related to the conditions for the maintenance of livestock and for the enhancement of its basic qualities. Veterinary specialists are involved in seeking out effective measures of disease prevention in animals. At the same time our engineers are developing modern means of mechanization and economists are creating systems for organizing and reimbursing labor.

There has been some success. The out-of-town session of the livestock-raising buro of VASKhNIL [All-Union Academy of Agricultural Sciences imeni V. I. Lenin] approved the breeding-selection work being done by our scientists.

We feel it is especially important that we now find it possible to eliminate organizational discreteness and to shorten the "science-production" cycle. As a result, the effectiveness of research has increased. Whereas in 1976 the economic effectiveness of introducing scientific developments within the NPO framework equalled 211,000 rubles, in 1984 the corresponding figure was

over 3 million rubles. Other enterprises in the republic take up the innovations introduced by sovkhoz associations.

Recently it has become fashionable to refer to large farms as complexes. But a name change alone does not alter the situation. A thoroughly comprehensive approach is needed. Some directors of enterprises at different times will extol first the untethered upkeep of livestock, then the flow shop system. Success is determined not by uncoordinated but by comprehensive measures.

I would like to cite the example of Malayeshtskiy Sovkhoz, the republic's leader in livestock-raising. Its director, L. Gural', has been given the high title of Hero of Socialist Labor. Under his leadership the collective last year produced an average of over 5,500 kilograms of milk from 900 cows. Today milk yield will improve even more. This can be discussed with certainty because the opportunity for growth was created by, among other things, permanent breeding work and a scientifically-based system for raising calves. It is noteworthy that every primapara heifer weighs at least half a ton and is thus capable of yielding 6,000 kilograms of milk and more. Such livestock potential is encouraged, of course, by full-value feeding.

Incidentally, if we judge by the level of capital investments, we will find many enterprises which should have achieved much greater end results. These results were not achieved and were inferior to those achieved by Malayeshtskiy. Why? The reason lies in a violation of the integrated nature of these investments. For the sake of clarity I will compare two sovkhozes specializing in milk production, Mikautsy and Pervomayskiy. They are located in the same zone and have been provided with equal opportunities. But here are some typical indicators. Mikautsy Sovkhoz has more cows than Pervomayskiy Sovkhoz by a factor of 1.8 but its production output is greater by a factor of 2.5. Lags in the second enterprise are related to violations of integratedness and to the fact that there are both weak and strong links within a single technological chain.

Here is another example. In Varatik Sovkhoz of Kutuzovskiy Rayon fixed production capital per cow equals 3,200 rubles, whereas in Mikhalaishanskiy Sovkhoz of Oknitskiy Rayon it is almost half of this. Nevertheless, in 1984 the second enterprise produced over 50 quintals of milk per cow and 46 quintals per 1,000 rubles of fixed capital. The corresponding figures for Varatik Sovkhoz are 28 and 8 quintals of milk. Fixed capital is utilized worse by a factor of 5.7 than in Mikhalaishanskiy sovkhoz.

A special word must be said about specialists. It is no secret that on farms where the productivity of cows is up to 3,000 kilograms a conscientious graduate of a technical school or even an experienced practical worker can fulfill this role. More thorough knowledge is essential at the next stage when milk yield is significantly higher. Unfortunately, not all graduates of higher educational institutions by far have the necessary preparation. It is no accident that many do not want to and are afraid to work in large complexes of the industrial type.

The association has been given the responsibility for breeding-selection work and for the reproduction of the herd in enterprises. A long-term program for improving dairy cattle raising has been developed and is being implemented. Already today over 85 percent of the dairy herd consists of animals of Moldavian Black-Spotted breed, which is most promising for this area.

Breeders rely heavily on computers in their work. The Seleks system used here enables us to efficiently control breeding processes and to make predictions about the genetic improvement of the dairy herd in the republic as a whole. With its help, zootechnical and breeding calculations in enterprises are organized. It is also noteworthy that in the course of the last few years in the republic as a whole the output of 90-92 calves per 100 cows has been achieved.

The contribution of the association can and must increase. We also have a large proportion of uncompleted research and of research that has not been widely applied. We must considerably increase the economic foundation of scientific research and solve a number of other problems. Especially alarming is the degree of uncertainty concerning the legal situation of the NPO. Our enterprises are a part of the RAPO [Rayon Agro-Industrial Association]. Plans for it are confirmed after a consideration of local goals. But after all, scientific interests and experimental possibilities are not limited to local goals. I feel that the nature of planning production results for the NPO should be changed. Enterprises must be interested first and foremost in assimilating scientific-technical achievements and progressive experience --in that for the sake of which associations are created. It is also apparent that the NPO as a whole must acquire the right to spend part of its profits to strengthen the material-technical base of science.

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PROGRESS OF BELORUSSIAN CATTLE BREEDING RESEARCH

Minsk SEL'SKOYE KHOZYAYSTVO BELORUSSII in Russian No 3, Mar 85 pp 28-29

[Article by V. S. Antonyuk, general director of Plemelita NPO [Scientific Production Association] and director of BelNIIZh [Belorussian SSR Scientific Research Institute of Livestock Raising]: "An Important Link in the Intensification of Livestock Raising"]

[Text] The country's Food Program calls for production by the Belorussian SSR of an average of 1.1-1.2 million tons of meat (slaughter weight) and of 6.9-7 million tons of milk annually in the course of the 12th Five-Year Plan. The republic is to increase milk yield an average of 600-700 kilograms per cow.

The leading role in solving this problem is played by dairy cattle breeding, the main branch of livestock raising. This is understandable. The productivity of the dairy herd determines not only the economy of livestock raising but also to a large degree the effectiveness of agricultural production in its entirety.

A great role is played by zootechnical science. Its task, in addition to developing systems of full-value feeding of animals and technologies for livestock production output, is to develop long-term measures to improve breeding and productive qualities of animals and to improve existing and develop new highly-productive breeds, types, lines, herds and hybrids adapted for highly productive technologies. The Belorussian Scientific-Research Institute of Livestock Raising is directing its efforts at meeting these goals.

There was a significant improvement in breeding work, large-scale breeding has been perfected, the process of improving the breeding and productivity of the herd has accelerated and scientific achievements are being introduced rapidly. As a result, milk and meat production increase from year to year.

But most importantly, an effective tie has developed between science and production. Scientists, together with breeding specialists, have worked out and introduced a complex program of mass livestock breeding. It foresees increasing the productivity of the dairy herd to 4,000 kilograms of milk with a standard fat content, increasing average daily weight gain to 1,000 and more

grams with expenditures of 1.1 feed units for the production of 1 kilogram of milk and of 6.5-7 feed units per kilogram of weight gain.

These tasks are being dealt with simultaneously in the following directions:

--the development of a Belorussian type of Black Spotted livestock with a milk yield of 5,000 kilograms and a milk fat content of 3.2 percent and protein content--3.2 percent;

--the introduction of specialized dairy lines, utilizing Holstein-Friesian cattle with a milk yield of 6,000-7,000 kilograms and standard milk fat content;

--the development of lines of cattle with high butterfat-yielding capacities using the Jersey breed;

--the development of a Belorussian type of beef cattle;

--the increase in the amount of commercial crossbreeding of maternal herds unsuitable for breeding (up to 14 percent of the herd) with bulls of beef herds.

What specifically has been accomplished to carry out this program? In 1984 a state committee of the USSR MSKh [Ministry of Agriculture] approved a new plant type of Black Spotted cattle developed by means of the method of reproductive crossbreeding with the Dutch Friesian breed. Milk yield of mature cows in enterprises of origin equals 6,000 kilograms of milk with a fat content of 3.78 percent. Milk yield of the best cows reaches 10,000 kilograms and more. Over 250,000 cows and 230 bull sires of the new plant type are being used in the republic's kolkhozes and state farms. The semen of these bull sires is used to inseminate about 500,000 cows and heifers, or one-third of the mating contingent of Black Spotted cattle, annually.

When developing a dairy type of Black Spotted cattle, the more effective methods of utilizing animals of the Holstein-Friesian breed have been studied, determined and proposed. It has been established that imported animals raised properly under the conditions of Vedrich Breeding Plant, Rechitskiy Rayon, acclimate well and maintain the basic breed characteristics--high milk productivity (6,500-7,000 kilograms of milk with a fat content of 3.5-3.6 percent), good live weight, return on feed by means of products, good reproductive qualities and suitability of cows for machine milking. Average milk yield from 148 Holstein-Friesian primipara heifers equalled 6,620 kilograms of milk with a fat content of 3.5 percent; from 59 cows of the second lactation--7,999 kilograms and 3.69 percent; and from 44 cows of the third lactation--7,753 kilograms and 3.69 percent respectively. This represents the best results of using Holstein-Friesian cows in our country.

A number of scientific-economic studies have been carried out to examine dairy and beef productivity of animals developed by crossbreeding cows of the Black Spotted breed with Holstein-Friesian bulls. Under conditions of high and average levels of feeding of animals, crossbreeding enables us to increase milk yield of cows by 10-13 percent and butterfat content--by 6-10 percent.

In the same Vedrich Breeding Plant crossbred animals produced 4,034 kilograms of milk and 156 kilograms of butterfat with an expenditure of 47 quintals of feed units per lactation; for Black Spotted analogues the corresponding figures were 3,648 and 147 kilograms. In Ross' Breeding Plant, Volkovyysskiy Rayon, with an expenditure of 49 quintals of feed units the yield of crossbred cows per one lactation comprised 5,172 kilograms and of butterfat--180 kilograms, or 699 kilograms of milk and 18 kilograms of butterfat more than the yield of Black Spotted cows.

It must be emphasized that this type of productivity in animals was achieved with full-value feeding. Crossbreeding is not effective if 28-30 quintals of feed units are utilized for a primapara heifer. With an expenditure of 29.5 quintals of feed units and 327 kilograms of digestible protein, Holstein-Friesian crossbreeds yielded only 3,000 kilograms of milk with a base fat content during the first lactation, whereas their contemporaries of the Black Spotted breed yielded 3,146 kilograms.

Consequently, pure-breed Holstein-Friesian cows and their high-quality crossbreeds meet the requirements for intensive cattle breeding. Their efficient use is possible only with the intensive raising of heifers (feed expenditure per heifer in the course of 18 months of life--26-28 quintals of feed units and 290-310 kilograms of digestible protein). Annual feed expenditure per cow should not be lower than 46 quintals of feed units. In connection with this, BelNIIZh recommends that the crossbreeding of Black Spotted cows with Holstein-Friesian bulls take place in enterprises with stable large supplies of feed and with constant control by the republic's breeding service.

The use of the Jersey breed to increase the fat content and profitability of milk production was researched and passed production testing. With an average and high level of feeding of animals for the republic (feed expenditure of 30 quintals and more per primapara heifer), the crossing of cows of the planned breeds with Jersey bulls encourages a 0.5-0.9 percent increase in butterfat content. Thus, Jerseys crossed with Black Spotted crossbreeds of the first generation yielded 2,771 kilograms of milk with a fat content of 4.47 percent or 124 kilograms during the first lactation with feed expenditures of 34 quintals of feed units and 350 kilograms of digestible protein. Under similar conditions contemporaries of the Black Spotted breed yielded 2,930 kilograms of milk with a fat content of 3.81 percent. The output of butterfat equalled 112 kilograms.

The mass improvement of breed and productive qualities of cattle is implemented by means of large-scale selection methods, at the foundation of which lies the use of high-class bull-improvers via a network of state breeding enterprises. A well-structured system of breeding work has developed. Here is how it looks. State breeding plants, with orders from state breeding enterprises for obtaining and selling bulls of the necessary quality (including according to lines) and quantity, plan breeding work with herds. State breeding enterprises raise bulls intensively, evaluate them according to a complex of characteristics and utilize lines by rotation according to the existing plan of breeding work with the Black Spotted breed developed by BelNIIZh and accepted for introduction by the BSSR MSKh in the

period to 1990. The frozen sperm of bulls from state breeding enterprises is used by farms under the supervision of rayon breeding stations.

Within the system of breeding work the examination of bulls according to the quality of progeny is also important. This is very labor-intensive, slow and protracted and requires fairly large expenditures of material resources. At the present time this work is carried out by almost all enterprises with the corresponding feed and breeding base. Only six breeding sovkhozes (one per oblast) specialize in the evaluation of bulls according to quality of progeny.

It is essential to note that the specificity of this work, its lack of organization and the inadequate material-technical base of specialized enterprises do not meet the need of production for high-class bulls-improvers. In recent years their semen has been used to inseminate no more than 40 percent of cows and heifers. Until now within the republic's system of breeding plants there have been practically no enterprises to evaluate bulls of dairy breeds according to the productivity of their daughters. This slows the pace of progress in breeding greatly.

The shortage of zootechnical instrumentation--collars for marking cattle, tongs for marking animals with brands, measurement instruments (calipers, tapes, rulers), milking buckets for milking by individual teat, equipment for determining fat and protein content in milk and so forth--also hinders the implementation of mass breeding of the dairy herd.

One of the reserves for further increasing beef production and for improving its quality is the development in the republic of specialized beef cattle breeding as an independent branch. BelNIIZh, jointly with specialists, has begun work to develop a new breed group of beef cattle. The basic parameters for animals of this future breed group include: output of 90 calves per 100 cows, and live weight of young bulls at weaning at the age of 8 months--280-300 kilograms, at the age of 12 months--440-460 kilograms and at the age of 18 months--640-660 kilograms. Average daily weight gain from birth to time of sale must equal 1,100-1,200 grams. Live weight of mature cows should be 570-680 kilograms; of bulls--950-1,200 kilograms.

BelNIIZh, together with specialists of BSSR MSKh, studied the adaptive and productive qualities of imported breeds of cattle in the course of 1978-1984. The most promising for raising under the condition existing in this republic are the Charolais, Limousin, Maine-Angou and Hereford breeds.

For the first time in the country a station has been created in the Budagovo Experimental-Production Enterprise (breeding center of BelNIIZh) for evaluating young bulls of beef breeds according to their own productivity and mature bulls according to the quality of their progeny. During the 1984 evaluation young bulls of the Charolais variety yielded an average daily weight gain of 1,181 grams in the course of the entire growth period, of the Maine-Angou breed--1,306 grams, of the Limousin breed--1,080 grams and of the Hereford breed--985 grams with the corresponding feed expenditures per kilogram of weight gain: 6.17, 6.1, 6.76, and 7.1 feed units. Young bulls whose average daily weight gain surpasses that of the others by 25-30 percent

and which surpass others by 7-10 percent in terms of return on feed are used for breeding purposes.

The combination of dairy-beef and beef breeds of cattle in the breed-development process was studied. At the age of 15 months during an evaluation of their own productivity, young crossbred bulls reached a weight of 465 kilograms and demonstrated an average daily weight gain of 1,255 grams during the test period with feed expenditures of 5.7 feed units per kilogram weight gain. Young bulls with an average daily weight gain of 1,470-1,660 grams were retained for further breeding work to develop a new type of beef cattle.

An experimental farm for 400 cows was built for the Babiy Les brigade of Budagovo OPKh with the goal of developing animals of a new beef type adapted to local conditions with upkeep during the stall period in facilities having a light-weight design. During the last wintering period 170 head of crossbred and pure-breed young animals were already maintained in a three-wall shingled shed. On the basis of observations we can draw conclusions on the possibility and expediency of using similar facilities for maintaining beef cattle.

Much has been done to implement the republic's "Vosproizvodstvo" [Reproduction] program, which foresees improving methods of reproduction and artificial insemination of farm animals. The training of cadres of inseminators has been organized in institutes and technical schools in all republic oblasts. Each year 60-70 persons study in courses offered by BelNIIZh. With the participation of institute scientists, each year there are rayon, oblast and republic meetings and seminars of zooveterinary specialists devoted to questions of improving herd reproduction.

A technology has been developed for the artificial insemination of cows and heifers which includes the selection of females in heat, their delivery to the point, methods of fixation during insemination and of subsequent exposure and the outfitting of the point. As a result, the insemination rate of cows has increased by 8-10 percent, there has been a noticeable curtailment in the time between birth and first insemination, the system of accounts has improved and the labor productivity of operators of machine milking has increased.

A number of reproduction processes have been perfected. In particular, it has been proposed that special maneges equipped with box stalls be used during the insemination and subsequent maintenance of heifers until the end of their rutting period. The institute has developed an objective refractometric method to determine the optimal insemination period for cows. The equipment is inexpensive, the method is accessible, easily carried out and can be used extensively in enterprises.

In order to accelerate the pace of utilizing available genetic potential productivity, institute scientists have worked out a technology for developing highly productive herds which includes a system for raising heifers and for evaluating and increasing the milk yield of primapara heifers, an increase in the amount of time cows are used by farms and optimal parameters for replacing the maternal herd in enterprises of different categories. All breeding plants specializing in the development of dairy cattle breeding operate according to this technology. Milk yield per cow has already surpassed 4,800 kilograms

here. The basic elements of this technology have been introduced in Volkovyskiy Rayon, where enterprises achieved an average yield per cow of over 3,000 kilograms in 1984.

Noteworthy in this regard are the results of operations of enterprises belonging to Plemelita Scientific-Production Association. In Budagovo OPKh the stepwise use of a similar technology enabled workers to increase milk yield per cow from 3,220 to 4,467 kilograms over a 5 year period, and in Zarech'ye Horsebreeding Plant--from 3,560 to 4,392 kilograms.

Science already has at its disposal data on the possibility of early prediction of an animal's productivity according to its biochemical individuality and its immunogenetic and cytogenetic status. More thorough research to develop methods for predicting productive qualities and for directing the evolution of animals will significantly curtail the time needed to introduce productive and economic masses of cattle and will enable us to achieve a rapid replacement of generations.

Within the biology of reproducing agricultural animals there is great urgency in the struggle against barrenness in the herd, in the early determination of pregnancy in cows, in the synchronization of sexual cycles, in the study of the reasons for the death of embryos and neonates and in the study of ways to produce a larger viable progeny. We must develop effective methods of embryo transplantation, long-term storage and cloning, of sex regulation and of improved fertility and multiple-birth capability of females. A great deal remains to be done in the selection of animals with genetically-based immunity to the most widespread diseases, and first and foremost to tuberculosis and leucosis. Preliminary research results are promising.

The end result of the work of BelNIIZh breeders toward the end of the 12th Five-Year Plan will be the development of three herds, two related groups and one line of plant-type Black Spotted cattle with a milk yield of 5,500-6,000 kilograms having a fat content of 3.8 percent (from 3,500 cows) and an economic effectiveness of 0.5 million rubles. This will be the contribution of the institute's scientists to the fulfillment of the Food Program.

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LIVESTOCK

BELORUSSIAN MILK PRODUCTION, MEAT PURCHASE INDICATORS

1985 Data, 1 March

Minsk SEL'SKAYA GAZETA in Russian 28 Mar 85 p 2

Oblast and Rayon Indicators for Milk Production and Meat Sales at Kolkhozes and Sovkhozes in the Belorussian SSR, 1 March 1985

	Milk Production Per 100 Hectares of Agricultural Land	In % of Computed Level, Taking Resources Into Account	In % of Last Year	kg	Milk Yield Per Cow +, - of 1984	Percentage of Fulfillment of Quarterly Plan for Milk Purchases by All Categories of Farms
Gomel	67.7	108	112	316	+35	72
Minsk	72.5	107	108	298	+21	64
Brest	66.6	105	106	313	+14	66
Grodno	63.5	93	102	346	+6	62
Mogilev	45.5	74	114	241	+30	67
Vitebsk	44.8	71	113	235	+28	70
Rayons						
Total for BSSR	60.1	-	109	290	+23	67

	Milk Production Per 100 Hectares of Agricultural Land	In % of Computed Level, Taking Resources Into Account	In % of Last Year	Cattle	Average Daily Weight Increase	Average Weight of 1 Head of Cattle Sold To the State	Fulfillment of Quarterly Plan for Meat Purchases by All Categories of Farms
Oblasts							
Grodno	41.0	121	100.1	470	355	445	75
Brest	29.5	92	108	410	363	433	78
Minsk	28.3	84	111	375	306	411	75
Vitebsk	20.6	74	127	348	282	423	85
Gomel	21.0	72	102	383	321	409	69
Mogilev	16.8	61	113	353	274	404	65
Rayons							
Total for BSSR	25.6	-	109	388	317	423	75

1985 Data, 1 April

Minsk SEL'SKAYA GAZETA in Russian 25 Mar 85 p 2

Oblast and Rayon Indicators for Milk Production and Meat Sales at Kolkhozes
and Sovkhozes in the Belorussian SSR, 1 April 1985

	Milk Production Per 100 Hectares of Agricultural Land	In % of Computed Level, Taking Resources Into Account	In % of Last Year	Milk Yield Per Cow kg	% of Fulfillment of Quarterly Plan For Milk Purchases By All Categories of Farms	
Oblasts						
Minsk	121.1	107	108	498	+36	110
Brest	111.8	107	107	525	+27	114
Gomel	109.4	106	113	510	+59	119
Grodno	105.4	92	103	575	+14	110
Mogilev	79.4	76	113	421	+48	120
Vitebsk	78.4	75	112	410	+46	122
Rayons						
Total:	100.9	-	110	487	+40	115

	Livestock and Poultry Sales Per 100 Hectares of Agricultural Land		In % of Computed Level, Taking Resources Into Account		In % of Last Year		Average Weight of 1 Head of Cattle Sold To the State		Fulfillment of Quarterly Plan for Meat Purchases by All Categories of Farms
					Cattle	Hogs	Oblasts	Rayons	
Grodno	62.3	118	107	463	358	437	113		
Brest	46.9	98	112	419	355	422	120		
Minsk	42.5	82	108	380	303	409	112		
Gomel	34.6	78	106	391	321	408	109		
Vitebsk	30.0	69	127	350	287	421	123		
Mogilev	26.6	61	110	363	275	398	104		
Total for BSSR		39.5	-	110	392	316	418	114	

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UKRAINIAN CONFERENCE ON HOG RAISING INTENSIFICATION

Kiev SIL'S'KI VISTI in Ukrainian 17 Mar 85 p 2

[Article by B. Kovtun, SIL'S'KI VISTI correspondent, Ternopol Oblast: "The Intensification of Hog Raising"; passages in all caps shown in boldface in source]

[Text] IN TERNOPOL OBLAST THERE WAS A REPUBLIC-WIDE SCIENCE APPLICATIONS CONFERENCE ON "WAYS OF STRENGTHENING THE DEVELOPMENT OF HOG RAISING." PARTICIPATING IN THE CONFERENCE WERE DEPUTY MANAGERS WHO DIRECT THE AGRICULTURAL WORK OF OBLAST EXECUTIVE COMMITTEES, MANAGERS OF OBLAST STOCK BREEDING ASSOCIATIONS, MANAGERS OF ANIMAL HUSBANDRY DIVISIONS AT THE AGRICULTURAL RESEARCH STATIONS OF THE OBLAST ADMINISTRATION, SCIENTISTS AND SUPERVISORS OF FARMS THAT ARE DEVOTED PRIMARILY TO HOG RAISING. THE PARTICIPANTS OF THE CONFERENCE EXPLORED WORK METHODS USED ON COLLECTIVES AND THOSE EMPLOYED BY SPECIALISTS OF THE TERNOPOL AREA AND COMPARED THE RESULTS OF PRODUCTIVITY INTENSIFICATION EFFORTS IN THE FIELD OF HOG RAISING COLLECTED AT VARIOUS DISTRICTS OF THE REPUBLIC.

Last year the Podvolochisk enterprise provided the state with more than 1,500 tons of meat from hog production. For each quintal of production 7.1 quintals of feed units were expended. The cost of a quintal of meat is 114 rubles. The net profit from hog raising came to 214,000 rubles.

These figures attracted the attention of the conference's participants. They attested to the fact that improvements in productivity in the field are closely followed here.

The relevance of the issues examined is evident insofar as they stem from the central task--TO IMPLEMENT PRODUCTIVITY INTENSIFICATION METHODS IN ORDER TO ACHEIVE GREATER PRODUCTION WITH THE PRESENT LIVESTOCK WITH SMALLER EXPENDITURES FOR FEEDS, LABOR AND COSTS. The UkrSSR Deputy Minister of Agriculture D.M. Shagal himself stressed this very issue in his speech at the conference.

Despite the wide development of specializations and concentrations in the branch, and converting the branch to an industrial basis, the productivity of hog raising is still progressing slowly. At times livestock is kept too long, too much is expended on feed, and consequently a significant quantity of production is not achieved. This problem pertains particularly to a number of farms in Odessa, Nikolayev, Kirovograd, Sumy, Khmelnitskiy and Zhitomir Oblasts. Last year in these oblasts, because of the underfulfillment of farm economic potential, there was an output of only 47 to 55 kilograms of pork for each processed hog. The average daily increase in live weight is low; a sow bears from 10 to 11 piglets per year.

However, in every oblast there are farms that consistently attain high productivity and economic efficiency in hog farming. First and foremost these are the kolkhozes Peremoha of Pokrovskiy Rayon, Aurora of Nikopolskiy Rayon in Dniepropetrovsk Oblast; Ukraina of Machivskiy Rayon and the Lenin Kolkhoz of Velikobahachanskiy Rayon--the last two in Poltava Oblast, and finally the Chornobaiski interfarm enterprise of Cherkask Oblast. Also intensively developing hog-raising are the interfarm enterprises of Ivano-Frankovsk Oblast and certain other oblasts of the republic.

In the course of the last 15 years, a major effort of specialization in the field and its concentration has been conducted in the Ternopol area. At present close to 70 percent of the livestock is concentrated in 20 farms and on 4 enterprises engaged in pork production. Special state farms [spetsgospes] operate on a closed cycle and have their own feed base, but interfarm enterprises produce the feed base on behalf of the farms which are partners in the cooperative effort.

THE PRODUCTION OF PORK ON AN INDUSTRIAL BASIS FACILITATED THE DECREASE IN EXPENDITURE FOR FEED FROM 20 TO 30 PERCENT PER UNIT OF PRODUCTIO^N, SIGNIFICANTLY INCREASED THE OPERATOR'S OUTPUT AND LOWERED THE COST OF THE MEAT. Thus at the same time the profitability in the branch was increased, and the specific density of concentrates in feed rations was decreased. In place of these concentrates green succulent silage, particularly combined silage and other feeds, and waste products from the dairy and meat industries are used instead.

Having visited the previously mentioned Podvolochisk interfarm enterprise, the participants of the conference were convinced of the effectiveness of industrial technology in breeding and fattening hogs. Since the reconstruction of production lines here, manual labor has been kept to a minimum. The construction of cages, their distribution, hot water heating, ventilation and manure disposal systems create an optimal microclimate for the animals. The use of industrial technology, in comparison with customary practices, facilitated a 30-percent decrease in expenditure for feed required for a quintal of growth, labor was decreased to one-third of what it had been and the cost of production was cut by 25 percent. The average daily weight increase of the livestock went up by one-fourth.

Reconstruction of the animals' quarters continues. What necessitated the reconstruction? And what is its economic advantage? The director of the enterprise, E. T. Lubkovich, spoke to the participants of the conference about this.

"Our collective took on the obligation to bring about the production of 3,000 tons of pork by the end of the 12th 5-Year Plan, or to double the present level. It would have been necessary to increase the capacity of the enterprise correspondingly, to build six more standard fattening stations and to spend close to 3 million rubles. In order to avoid this, it was decided to reconstruct the existing quarters. In a typical fattening station there are eight rows of cages instead of four. Each holds 20 hogs. The floor in the cages is cleft and nipple-type waterers are installed. WE KEEP 2,080 HOGS IN EVERY FATTENING STATION--THIS IS TWICE AS MANY AS BEFORE THE RECONSTRUCTION. ONE OPERATOR ATTENDS TO THIS LIVESTOCK.

Through expansion of cultivated acreage for alfalfa, mangel and sugar beets, carrots, and corn and peas for grain, the enterprise has perceptibly improved its feed base.

The crossbreeding of various strains of hogs is very advantageous, especially breeding the large white with the Poltava meat breed."

"We pay close attention to the development of hog raising," indicated U. V. Semyenov, the secretary of the Ternopol Obkom of the Communist Party of the Ukraine, speaking at the conference. The party raykoms and rayon executive committees have worked out concrete measures and their implementation and these are under constant supervision.

IN 4 YEARS OF THE PRESENT 5-YEAR PLAN, IN COMPARISON WITH THE SAME PERIOD OF THE LAST 5-YEAR PLAN, THE AVERAGE ANNUAL STOCK OF HOGS IN THE FARMS OF THE OBLAST HAS INCREASED BY 16 PERCENT, OR BY 5 HEAD PER 100 HECTARES. THE PRODUCTION OF PORK AND THE SALE OF IT TO THE STATE HAS INCREASED ACCORDINGLY BY 6 AND 15 PERCENT RESPECTIVELY.

The specialization in and concentration of hog raising allowed for the improvement of the organizational structure of selective-breeding lots. A few years ago the Mikulinetski Interrayon Stock Breeding Association was created for the improvement of this work and especially for the wide application of artificial insemination of animals. Participants of the conference became acquainted in detail with its work. Today this is a highly organized enterprise which implements scientific methods to improve the breed quality of animals.

Thanks to the artificial insemination of sows, in the past 4 years more than 609,000 piglets were produced. This figure includes 543,000 hybrids. As a rule, such a young hog is characterized by its highly vigorous growth, its ability to be fattened, and its high quality meat. By the end of this 5-year plan 70 to 75 percent of hogs produced will consist of this type of young animal, which will make it possible to increase pork production and decrease expenditures for feeds.

Stock breeding is also practiced by the breeding farm advisory committees of the oblast's agricultural research station and on 19 pedigree stock farms and also in the pedigree stock breeding groups of the special state farms which concentrate on pork production.

By the end of 1990 stock breeders of the oblast should double the production of pork in comparison with what was produced in 1984. In connection with this effort, MAJOR ATTENTION IS BEING GIVEN TO STRENGTHENING THE FEED BASE. Farms are enlarging their acreage under cultivation with alfalfa for green mass and hay, mangel and sugar beets, and are preparing a considerable amount of combination silage.

To increase the value of the hogs and to fatten them up, more than 120 tons of beets are being put away this year, or 6 tons per sow. More attention is being paid to the cultivation of corn for grain and the preparation of fodder. All farms are enlarging their acreage under cultivation for peas. The interfarm combined feed factories provide specialized feeds for hog livestock at all stages of growth.

The participants of the conference summarized the progressive experience of the republic in its efforts to intensify the productivity of hog raising. The actual proposals expressed by them were based in the corresponding recommendations. At the same time they noted ways to remove the shortcomings which hold back development in the field. In summing up the work of the conference, O. M. Tkachenko, the UkSSR minister of agriculture, especially underscored these shortcomings.

THE WIDE IMPLEMENTATION OF INDUSTRIAL TECHNOLOGY AND THE SCIENTIFIC PRINCIPLES OF INTENSIFIED PRODUCTIVITY IN HOG FARMING MUST BECOME THE TOP PRIORITY TASK IN THE WORK OF SCIENTISTS, SPECIALISTS, SUPERVISORS OF FARMS AND CATTLE BREEDER'S COLLECTIVES. To this end, the store of information gleaned from the successful implementation of the Food Program is vital for the country and is the task of the present as well as the next 5-year plan.

12911
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CATTLE, HOG BREEDING IN LATVIA FOR INCREASED PRODUCTIVITY

Riga SOVETSKAYA LATVIYA in Russian 4 Apr 85 p 2

/Article by A. Yemel'yanov, deputy minister of Agriculture for Latvian SSR:
"Reserves for Breeding Work"/

/Text/ The Food Program has called for a further increase in the production of livestock husbandry products. Moreover, importance is being attached to intensifying farm management, with greater reliance being placed upon raising the productivity of the livestock. Highly productive pedigreed cows must be introduced into the herd. For a number of years now, our breeding farms have been obtaining an average of 4,500 or more kilograms of milk per cow, with a fat content of approximately 4 percent. Last year the milk yield in Rizhskiy Rayon was in excess of 4,000 kilograms and this year the farms in Dobelskiy Rayon are striving to achieve a yield of 4,000 kilograms. The leading farms, those with pedigreed cattle, are expending their feed in an efficient manner. They are expending approximately 1 feed unit for obtaining a kilogram of milk, with considerably more feed being expended in those areas where the milk yield has not reached 3,000 kilograms annually.

A similar situation prevails on the fattening farms. In those areas where average daily weight increases of a kilogram or more are being achieved, the feed is being consumed in a more thrifty manner. In raising pedigreed young stock, the farms are expending roughly 6 feed units per kilogram of weight increase and at times twice this amount of feed is being expended during fattening operations for young bulls the pedigree qualities of which are lower.

Cows of the Latvian brown strain predominate on our farms. It was not too long ago that it was felt, an unjustifiably so, that they could not furnish more than 4,000 kilograms of milk. Today the productivity of our cows has been raised not only by individual livestock breeders but also by the Druva and Yaunays Komunars kolkhozes in Saldusskiy Rayon to more than 5,000 kilograms. Such an increase is the result not only of a balanced ration but also of improvements in breeding operations. The crossing of the Latvian brown with the red Danish strain made it possible to create a new line for the strain. The cows of this improved line are capable of furnishing more than 5,100 kilograms of milk annually, with a fat content of 4.17 percent. In terms of productivity, this exceeds the standard for the Latvian brown strain by 87 percent. The offspring of these cows are being distributed; they are furnishing more than 7,000 kilograms of milk annually, with a milk content of 4.42 percent -- almost 1 percent higher than the standard.

The crossing of the Latvian brown with the Anglerskaya strain is also opening up fine prospects for increasing the production of milk. The first generation of cows obtained has already revealed a raised productivity; they are capable of furnishing 100-300 more kilograms of milk annually. The fat content is increased by 0.05-0.15 percent and the protein content -- by 0.03-0.05 percent. These cows have a higher milk delivery speed. This advantage is manifested when use is made of the industrial technology: more cows can be milked by one operator. Cattle of black-variegated strains are being made available at the Tervete Kolkhoz in Dobalskiy Rayon, at the Yaunpilsskaya Livestock Experimental Station in Tukumskiy Rayon and at a number of other farms throughout the republic. These cows are also distinguished by high productivity. The milk yields at the mentioned farms exceed 5,800 kilograms. The best livestock breeders -- El'za Mitrike of the Adazhi Kolkhoz in Rizhskiy Rayon, Hero of Socialist Labor Stanislav Livmanis of the Yaunpilsskaya Station and others -- are obtaining 7,000 or more kilograms of milk.

The black-variegated cows constitute 4 percent of the republic's milking herd. But their number will be increased and this will make it possible to raise milk production substantially. Jointly with the practical workers, the scientists have undertaken to improve this strain through crossings with Holstein cattle. The task has been assigned: to combine various lines of black-variegated cattle and to create a local strain having improved qualities.

The Seleks System created 7 years ago has made it possible to improve the strain qualities of the milking herd considerably more effectively. This holds the promise of a considerable increase in milk production and yet a requirement will exist for strengthening the feed base, improving the production technology and raising the skills possessed by the workers.

A portion of the cows, the offspring of which for various reasons cannot be used for augmenting the milking herd, are being crossed with beef strains of cattle. This operational trend will raise the quality of the beef and make it possible to produce more of it and to consume less feed per kilogram of product.

Breeding work is of considerable importance in swine husbandry. Importance is attached here not only to obtaining a rapid growing strain, one which consumes a minimum amount of feed, but also one which furnishes tasty and low-fat meat. We are breeding five strains of hogs: Latvian white, large white, Landrasy of Swedish and Belgian origin and Dyurok.

Pure-bred hogs are being raised on 49 farms, which also supply them for inter-strain crossings, thus satisfying the requirements of all of the hog raising kolkhozes and sovkhozes. Last year the breeding farms sold approximately 24,000 head of young stock, thus fulfilling their established tasks.

A well organized system for supplying pedigreed young stock for kolkhozes and sovkhozes engaged in pork production and inter-strain crossings are making it possible to develop this branch successfully. The indicators for the large hog raising complexes of the Rudbarzhi, Shkyaune and Ogre sovkhozes, the Vishskiy Sovkhoz-Technical School and others, where double and triple-strain crossings are being carried out, are especially high. Last year the average

daily weight increase in hogs at the Rudbarzhi Sovkhoz was 691 grams and the average delivery weight -- 130 kilograms. The hog breeders at the Ogre Sovkhoz sold more than 3,000 tons of products and maintained a daily weight increase of 519 grams.

All of the farms engaged in producing pork are following the example set by the hog raising complexes and are improving their reproduction of the herd and inter-strain crossings. However, by no means are all of them achieving the average daily weight increases required. Quite often low weight animals are being delivered to the meat combines and this is having an effect on labor efficiency throughout the branch. Here there are many and varied shortcomings which must be eliminated.

Our large complexes and breeding farms possess considerable potential. Last year the average daily weight increase at stations for the controlled fattening of hogs of the Latvian white strain reached 727 grams. For each kilogram of weight increase, 3.63 feed units were expended. The length of the carcass obtained, the thickness of the lard and the weight of the ham meet the requirements for the elite class. Thus, having organized fattening operations in conformity with the scientific requirements, we can sharply increase the production of high quality and cheap pork. Unfortunately, our hog raising farms are expending twice as much feed and at times three times as much and with worse results. We are presently selecting the best animals for use in further improving the strain. At the Berzini Sovkhoz in Kraslavskiy Rayon, a boar was raised the offspring of which are capable of furnishing daily weight gains in excess of 1 kilogram, with a low expenditure of feed.

The mass distribution of pure-bred young stock among all of the hog farms points towards a considerable increase in meat production, with low feed consumption. During the very next five-year plan, it will become possible to breed and raise hogs which, during a period of 205 days, will attain a weight of 120 kilograms and furnish an average daily weight increase of 800 grams, with feed consumption on the order of 4 feed units per kilogram of weight increase.

In the future we will carry out our breeding work based upon the scientific achievements and leading experience presented at the USSR VDNKh /Exhibition of Achievements of the National Economy of the USSR/ and also the experience accumulated on better farms throughout the republic. This path is opening up new and great horizons for the livestock husbandry branch. But in order to make full use of the reserves for breeding operations, it will be necessary to raise the level for all of our work. We must staff all of the farms with highly skilled and conscientious personnel and we must strengthen the feed base. Work is being carried out in this direction. The construction of housing facilities and social-domestic installations is being expanded in the rural areas and improvements are being carried out in feed production. All of this is creating proper conditions for achieving a substantial increase in the production of milk and meat throughout the republic.

GEORGIAN AGRICULTURAL SUPPLY, APK MANAGEMENT EVALUATED

Moscow PRAVDA in Russian 8 Apr 85 p 2

Article by G. Lebanidze, Georgian SSR: "With Home Delivery"

Text It is 2 years now that the State Committee for Agricultural Production has been functioning in Georgia by way of an experiment. It was created on the basis of three former departments -- the ministries of agriculture and land reclamation and water management and Gruzsel'khoztekhnika. An article has already appeared in PRAVDA concerning the first steps taken by the committee and the work of the agroindustrial associations under the new conditions. In this article the author discusses how logistical support for the rural areas is being carried out on an inter-departmental basis.

The committee has at its disposal such important levers as planning and supply. These advantages are embodied in the organizational structure of the new organ.

What was the situation earlier? The machines, for example, belonged to Minsel'khoz (Ministry of Agriculture) and the resources required for maintaining their working efficiency -- to Gruzsel'khoztekhnika. An opportunity has now appeared for centralizing the funds and finances, distributing them more efficiently and satisfying more completely the requirements of the farms.

The system of logistical supply for villages throughout the republic had many defects. Those kolkhozes and sovkhozes, the leaders of which were able to "dislodge" funds, were equal to the task as the saying goes. The work often led to direct deception and fraud. Some farms had surplus amounts of equipment and spare parts, while others suffered from shortages. Quite often the leaders and specialists, instead of carrying out their primary responsibilities, performed in the role of expeditors.

An engineer at a sovkhoz in Goriyskiy Rayon spent 131 days during the year carrying out such trips. The speedometer of the vehicle assigned to him indicated approximately 10,000 kilometers. In 1981, the workers at a sovkhoz in the village of Kartikami in Akhalkalakskiy Rayon spent 689 man-days in acquiring spare parts. Many such examples could be cited.

When the supply system became a component part of the agricultural organs, the "deficit" decreased. But the committee went further: the decision was made to subordinate the logistical support service completely to the interests of the farms.

How does the supply system appear in actual practice? The committee allocates resources to each RAPO /rayon agroindustrial association/. For its part, the association decides to which farm the resources and funds are to be given and how much.

At this point, the concern of the RAPO and the farms for logistical support comes to an end. The committee assigns the kolkhozes and sovkhozes to appropriate sales bases. And these bases, just as soon as the resources arrive and without waiting for payment, reminders, additional instructions or requests, deliver them to the farms.

"I must confess that in the beginning we entertained some doubts regarding the effectiveness of centralized supply" recalled the chairman of the Kolkhoz imeni Lenin in Makharadzevskiy Rayon, Hero of Socialist Labor and deputy to the USSR Supreme Soviet G. Tsitlidze, "There was some question as to whether or not the committee would be able to reach each farm. Today they are convinced -- the kolkhoz is receiving practically everything that is planned for it."

Thus improvements have been implemented in the system for supplying the farms with logistical resources. This is one aspect of the problem. They have also begun to reduce the above-normal surpluses, which reached 126 percent for the republic as a whole.

And how was it possible to achieve a situation wherein the sales bases ship goods to the farms without even waiting for payment? Did this not encourage the development of debtor indebtedness? It goes without saying that there will be no such indebtedness. Gosplan, the Ministry of Finances for the Georgian SSR and the republic's office of USSR Gosbank met the new committee half way and changed the system of accounting for equipment, spare parts and other resources. The farm funds allocated for this purpose (included here are their own finances and long-term bank credits) were collected together from the entire republic. Last year this amounted to approximately 70 million rubles and it was handled by the State Committee for Agricultural Production. The farms were released from having to maintain accounts with the suppliers. Such accounts were maintained by a financial-bookkeeping administration created within the committee.

It is obvious that centralized deliveries require efficient work on the part of the sales bases. They are large and specialized. Reductions have taken place in the administrative personnel assigned to the bases and in the trans-shipping of freight and the level of mechanization has been raised.

When they began introducing centralized deliveries into operations, a great amount of reliance was placed upon transport equipment. In each rayon there are several small departmental motor transport enterprises. The decision was made to abolish weak motor transport establishments and to use them for creating large and modern motor transport columns. This released a considerable number of administrative personnel for other tasks and it resulted in the

creation of the logistical base required for the transport service. At the present time, there are 38 large transport enterprises within the republic.

The farms have already been supplied with more than 25,000 units of various types of equipment. Gradually the nomenclature for deliveries is being expanded. A centralized supply system has been developed for providing the kolkhozes and sovkhozes with mixed feeds, fertilizers, chemical and fuel. These materials are already being delivered to Tsiteltskaroyskiy, Abashskiy and the Samtredskiy RAPO's and also to a number of other rayons. The state committee has assigned specialized transport to enterprises of the republic's Ministry of Procurements for the purpose of carrying out centralized deliveries of mixed feed.

"On the one hand, the rayon agroindustrial associations have been granted extensive rights in connection with the distribution of resources" commented the chairman of the council of the Goriyskiy RAPO V. Khutsishvili, "And on the other hand, our hands have been untied and we are not familiar with the numerous supply problems. The supply mechanism in operation at the present time, involving "home delivery," continues to operate with no reduction in volume."

And what has this done for the branch as a whole? Such was the question which I directed towards the deputy chairman of the State Committee for Agricultural Production R. Kakuliya.

"According to preliminary data" he stated, "the new system of supply is providing more than 3 million rubles worth of savings annually. Compared to the preceding year, the turnover in goods during 1984 was accelerated by 4 days. Reductions were noted in expenditures for delivering resources to the farms. A reduction was also noted in debtor-creditor indebtedness. And a fact which was of special importance: at no farm was surplus equipment being used for the purpose of making commodity turnover appear more impressive."

Certainly, the new work has encountered difficulties and problems. The agenda calls for improvements in organizing the transporting and delivery of harvested crops. It is no secret that we are still sustaining large losses caused by the poor acceptance of livestock and milk. At the present time, the committee, together with the interested ministries and departments is resolving the problem concerned with the acceptance of meat directly on the farms.

"Our task" stated the chairman of the State Committee for Agricultural Production G. Mgelandze, "is that of organizing the work in a manner such that harmony is achieved between the sphere of production and the sphere of providing services for the rural areas. Centralized supply serves this goal."

The experiment continues. Experience is being accumulated and some variants which do not pass inspection are being rejected. The workers attached to the republic's agroindustrial complex, in responding to the decisions handed down during the March (1985) Plenum of the CPSU Central Committee, are persistently striving to achieve more efficient use of the potential created in the rural areas and greater production intensification.

BELORUSSIAN OFFICIAL ON KOLKHOZ WORKER AUTONOMY

Moscow IZVESTIYA in Russian 24 Mar 85 p 2

[Article by twice Hero of Socialist Labor V. Starovoytov, chairman of the Rassvet Kolkhoz imeni K.P. Orlovskiy, deputy to the Supreme Soviet of the Belorussian SSR, Kirovskiy Rayon, Mogilev Oblast: "The Right to Decide"]

[Text] Independence and Responsibility

Today, IZVESTIYA is starting a new column. In order to achieve a decisive turn in the national economy's transition onto the path of intensive development, as the special, March Plenum of the CPSU Central Committee pointed out, we must continue to perfect the management system. It is important in this process to establish two inseparable principles--greater independence and greater responsibility--in all areas of the management and production work.

I have directed the farm for almost 30 years. I also served as a kolkhoz director here in the Mogilev area. I have now headed the Rassvet for 17 years, succeeding Kirill Prokof'yevich Orlovskiy. Our kolkhoz has a long and glorious history. I am happy to acknowledge my participation in it.

And how could I not be happy? Let us recall the postwar years. We began with nothing, after all: we did our own plowing, pulling the plows and harrows, towing them like barge haulers. Then we planted--meager handful from a bast basket. How happy we were to obtain ten quintals per hectare! We sang songs and ditties about a 100-pood harvest, as though about a great dream. And 100 poods is 16 quintals. Today, we obtain more than 300 poods per hectare, and we certainly do not consider this to be the maximum possible yield. On average, each hectare of Rassvet land provides the state with 1.1 tons of milk, 276 kilograms of meat, 300 kilograms of grain, 690 kilograms of potatoes, 150 kilograms of other vegetables, or the same quantity of fruit.

Yes, as a chairman, I can be satisfied: we have succeeded in accomplishing a great deal. All the Soviet people have a richer and more beautiful life. As a person, though, as a communist with 40 years of party membership I understand that Rassvet alone--and unfortunately, there are not so very many of them--cannot fulfill the Food Program. We are still forced to purchase part of our grain abroad--albeit, for feed and not for bread. And we must produce enough of everything we need ourselves.

Why are we not doing so? Where and how are things going wrong?

The state channels considerable funds into the development of agriculture. The land reclamation performed in Belorussia alone, for example, has cost almost four and one-half billion rubles. Five times as much equipment is now operating on the farms as they had with the MTS [machine and tractor stations]. This is in addition to the mineral fertilizers and everything else. In addition, the collective system of farming under which the land, the equipment and the money are concentrated in the same hands, is a form of management with enormous possibilities. We also have people who know how to grow the grain and how to perform any kind of peasant work well. We are not entirely successful, however. How can we talk of success, when the Rassvet has an income of 12 million rubles and 5 million rubles of extra money in its bank account, while the other kolkhozes in Kirovskiy Rayon have a total debt of 28 million rubles?

I cannot answer all of these many "Whys?", of course. And I shall not attempt to do so. As a chairman, I want to discuss the main cause. The kolkhoz and the kolkhoz chairman have too many advisors of various kinds--"teachers" and "commanders." There is someone to hold them accountable for the state of affairs, but there is clearly a shortage of independence and authority to make their own decisions.

According to the regulations, the farm is managed by a board accountable to a kolkhoz assembly, while the chairman exercises his will. In reality, however, both the kolkhoz and the chairman are bound by so many instructions, recommendations and directions that they cannot move not just their head, but sometimes even a finger. This is on the kolkhozes. It is even worse on the sovkhozes: managerial initiative there cannot even emerge through the paling of instructions.

It is a strange thing that people do not dare to try to teach a potter, for example, about whose simple trade it is said: The gods do not bake pots. In agriculture, however, with its multifaceted specific nature, its complexity and its dependence on natural conditions and weather, which no directions or instructions can foresee, everyone is good at giving instructions.

Several major decrees have been passed on the farm's independence at the very highest level. And each of them underscores the fact that the plan for sales of output to the state alone should be the main management policy "directive from above" for the kolkhoze. The plan and nothing else! It is up to the farm team and its director to decide by what means and how it is to be fulfilled. Allocate the necessary resources for the plan, and then no one has to be led by the hand each step of the way. Whatever the chairman needs to be taught, he does not need to be taught when to sow and when to harvest. He has nigh onto half a village of "academicians," who have turned the soil on which they work hundreds of times with their own hands. Still today, however, people are nudging them, teaching them when to plow and when sow, what to sow, when to harvest....

Theoretically, from the books, all of the "teachers" know that there are not just no two rayons, but no two farms with identical soil and climatic conditions. The neighbors have hills and sand, while we have gulleys and loam. They can put a tractor and plow into the field, while on our farm a horse will sink in up to its belly. Despite this, people still criticize me: "Your neighbors have been planting for a week, and you are still waiting. You are going to spoil the rayon report. We cannot answer to the oblast for you...." It is the same all over

again in the fall: "The neighbors are already threshing, but what about you? Are you waiting for us to do something"? And they do something in the heat of the moment.

About 3 years ago one of our kolkhoz chairman was expelled from the party for "disobedience": he had not begun the harvest on the day he was ordered to begin it at the rayon level. About 3 months later they were forced to admit that they had overreacted and were forced to return the man's party card. What was it like for him those 3 months, however, knowing that he was being unfairly punished, that he had done the right thing, had acted as a good manager would? And what about the advisor who issued the order to the chairman? Nothing happened to him. He came and then he left. He bears no responsibility for his advice. He is left out of the matter, even if you ruin things by following his recommendation. But he is not the one who has to answer to the kolkhoz workers at the end of the year, to look them in the eye and render account for his management--it is the board and the chairman. Is it their management, however? This is a timely question. In order for such a question not to arise, the situation must be the following: if you do not share equal responsibility with the kolkhoz chairman or the sovkhoz director for the consequences of your orders, don't issue them.

Or take the following incident, which occurred quite recently. A fairly high-ranking official came from the oblast and told us that we need to increase the area planted to clover. When asked why, he replied that these were the instructions from higher up. I explained that we already have 700 hectares planted to clover! He said that this was not enough, that we need to make it an even 1,000. All right, I agreed, but where are we to get those 300 hectares? By reducing potato production? It provides the kolkhoz with a net income of 1 million.... He told me that we have 900 hectares of corn, that we should reduce that amount.

How can we "cut" corn production, however, when the Rassvet has 11,000 head of cattle and 12,000 hogs? They have to be fed! The corn is what saves us: each hectare of corn at the milk-wax stage of maturity means 120 quintals of feed units. I tried to explain to the domineering guest that clover is not an end in itself, that we have just as much clover as we need. "The end in itself" is what is sold in the stores, what goes onto the plates. We have long since learned how to figure and we know how to obtain the most while spending the least. It was a good thing that the man was reasonable: we convinced him.

It was more difficult with respect to another lawful right of the kolkhoz workers--the right to receive milk. Back when Kirill Orlovskiy was still with us, the kolkhoz assembly voted unanimously for the workers not to keep cows on their personal plots, but to receive 2 liters of milk per workday from the kolkhoz farms. I don't know about other places, but this decision was implemented and became firmly established at our kolkhoz: the people's hands were freed, and they were put to work very productively.

Then all of a sudden, the rayon authorities told us that we were shorting the state by 1,200 tons of milk, that we were squandering this amount! In fact, the milk issued on the basis of workdays does amount to 1,200 tons of milk annually. We obtain 1,289 quintals of milk from each 100 hectares, however, and we sell slightly less than 8,000 tons to the state. We had to prove our case with figures. And these are the figures: during the first 4 years of the five-year plan the

rayon has increased the amount of milk sold to the state by 9,400 tons. Our Rassvet milk accounts for 4,100 tons of this, and the personal plots of rayon residents accounts for 4,100 tons. All of the remaining kolkhozes and sovkhozes have increased the amount by only 1,200 tons. The livestock and poultry situation is no better. During the first 4 years of the five-year plan the Rassve increased the amount of meat sold by 1,580 tons over the figure for the 10th Five-Year Plan. All of the other rayon farms taken together have reduced the amount by 1,200 tons. This is where the untouched reserves lie! In order to realise them, however, people are going to have to work. It is far easier to obtain it from the Rassvet: simply bring in the milk tankers and haul it out. To do so, however, is to ignore the specific contribution made by the labor collective to public production, to cut off the limb on which we are sitting--the people's sense of being in charge.

In short, I stood up for the kolkhoz workers' right to independence that time. I know that some people will say: "It is easier for Starovoytov, twice Hero, Deputy...." That is what they will say, and they will be right. My rank and titles do help me: it was with good reason that one of our witty colleagues referred to them as "the triple differential".... Joking aside, however, what are those running the farms to do without such "protection"? The wisest and most experienced ordinarily agree to all the recommendations and instructions and provide the figures needed for the rayon report, but actually do what they feel is necessary. Success is what is important, after all, and a winner is not criticized. But what if one does not win--the year was an especially bad one, for example--and fraud has been uncovered? "Things are bad because you did not listen," they will say. And some drastic changes in your personal life are inevitable. During the past 4 years, 80 percent of the chairmen in our rayon have been replaced, and the figure is just as great in adjacent rayons. (Why, 80 percent is not a great deal: I know one official who announced, not without self-satisfaction, that when he arrived in the rayon, he replaced all of the chairmen once and then a second time.... Fortunately, he himself was recently "replaced").

What is disturbing is the fact that many of the leaders of rayons and agricultural departments have been schooled in management, have themselves been good kolkhoz chairmen and sovkhoz directors and have themselves suffered from petty tutelage and bureaucratic administration. Now they are promoting those same methods themselves.

In my view, there are two reasons for this. The style of work, which is inherited: this is how I was treated, this is how I do it. It is not an easy matter to break habits. On the other hand.... The farms should not be ordered around, but should be directed, and these are not one and the same. But how should it be done?

On our kolkhoz, we do not simply order the workers to do this or that. We confer with them, create conditions which give the workers a material incentive; we are introducing economic accountability, payment based on the end results....

This is the way it should be at all levels of administration. Responsibility is a reciprocal matter. Give us the order (or, even better, provide us with the incentive to produce the needed product) and allocate the material resources for what is ordered. If you do not provide the resources, then you are responsible. If the farm does not fulfill its commitments, it has to answer--with its own ruble.

I am sure that no one who takes over the helm of management sets himself the goal of performing poorly. Some things may not turn out right, but this is more his misfortune than his fault. Before removing him, those involved should study the situation calmly, competently and with a thorough understanding of the matter, find the weak spot, help him to eliminate it and teach him how to do so.

I admit that we expected a great deal from the agroindustrial associations. We hoped that the farms' independence would increase and that economic methods of management would become dominant. An inefficient style of management based on paperwork is still being established, however--at least in our rayon and in the rayon agroindustrial association. Where is the common concern of the partners, and where is their responsibility to one another? Where is the thorough economic work, the analysis, the search for efficient forms of management?

Instead of this, those in charge of the farms are summoned 50 or 60 times a year, the chief specialists 120 or 130 times, to the rayon for various kinds of conferences, or bluntly speaking, for the next lecture. There is not a great deal of benefit from these. Every farm is a separate world which travels its own orbit. It has its own "take-off potential," its own problems--its own successes too. If you want to help, immerse yourself completely in that world, feel its interests, try to figure out what drivebelts and which wheels are functioning, and which ones are not. Everyone will then thank you for the practical advice and for the knowledge. All of us learn from one another. The party also teaches us that the performance of management work means, first of all, working with the people performing the operation. This task has nothing to do with shaking up cadres.

It is a simple matter to remove the one in charge. Removing him, however, is not a misfortune just for him and the team in which he has worked, but also for all those who have not yet been removed and who will perhaps never be removed. It "teaches" many of them not to demonstrate initiative, not to do anything without instructions "from above." It is far simpler just to live with the directive, of course: there is protection at all times. This kind of director is not engaging in management, however. He is fulfilling directives.

We still find incompetent and irresponsible managers, to be sure. In such a case, one is justified in asking who recommended the incompetent one. Why is he not answering for his recommendation?

I do not want it to be thought that I am against any sort of intervention in the life of the farm on the part of higher organizations, against any sort of suggestions, criticisms or instructions. No, the farms need to be helped and monitored. One thing should not be forgotten, however: it should be intelligent monitoring and have nothing in common with petty tutelage. Working with the people involves primarily selecting cadres and creating a climate whereby every serious suggestion evokes a desire to accept and implement it immediately.

It is also important, however, for the kolkhoz workers to have a sense of their own responsibility for the election of their chairman. One can then say to them: "You're the ones who elected him."

The way it is now, no one seems to be to blame, although the operation suffers. And not just the kolkhoz operation, but the greater, state cause as well.

ROLE OF SCIENCE, TECHNOLOGY IN AGRICULTURAL PRODUCTION

Moscow PLANOVYE KHOZYAYSTVO in Russian No 4, Apr 84 pp 111-116

[Article by I. Kurtsev, doctor of economic sciences and VASKhNIL [All-Union Academy of Agricultural Sciences imeni V. I. Lenin] professor: "Scientific-Technical Progress and Increasing the Effectiveness of Agricultural Production"]

[Text] The basic content of the party's economic strategy at the contemporary stage is determined by the requirements for increasing production effectiveness by means of placing the economy on an intensive path of development. The fulfillment of this goal is related to the acceleration of scientific-technical progress.

Scientific-technical progress in agriculture is manifested in the multi-faceted improvement and consolidation of the material-technical base with the extensive use in production of the latest achievements of agriculture and other branches of science. It is the basis for growth in agricultural production forces, which includes: a steadfast increase in soil fertility as the basic means of production in agriculture, a change in the nature of labor and in man's role in agricultural production by means of substituting mechanized labor for manual, raising the biological potential productivity of agricultural crops and animals, and growth in material elements of production forces by expanding the use of the means of production and by improving their quality.

Under conditions of scientific-technical progress, with a general tendency to increase total production potential in agriculture, there is a change in the role and place of individual types of production resources in agricultural development. However, these changes are closely related to each other since qualitative and quantitative changes in some elements of production potential within agriculture presuppose certain changes in its other integral parts. Under the influence of scientific-technical progress land productivity increases, which provides the opportunity to produce a growing quantity of products without expanding the total area of cultivated land. But this is related to corresponding changes in fixed and turnover production capital and to the transformations that have occurred in the nature of agricultural labor.

The use level of production potential has a decisive effect on the economy of agricultural enterprises. The higher the production output per unit of land area or labor productivity and the greater the return on the machine-tractor fleet, fertilizer, feed and so forth, the lower the cost of a unit of production, the higher the profitability and consequently, the greater the possibilities for strengthening the economies of kolkhozes and sovkhozes. At the same time, we should also consider the national-economic aspect of the problem of utilizing the production potential of agriculture, and above all of the limit of land suitable for agricultural use, the necessity to free a portion of labor resources from the agrarian sphere for other branches of the national economy and the limit of raw materials resources.

As regards the various forms of production resources and with a consideration of the effectiveness of their use, the process of intensifying agriculture is not manifested uniformly and has its own special features.

The main means of production in agriculture is land. In connection with this, the nature and degree of land use determines the level of intensification of agricultural production as a whole. The level of land use increases thanks to growth in the scientific-technical level of agricultural production on the basis of an increase in the use of fertilizers, of development of land reclamation, of supplying agriculture with modern equipment, of utilizing more productive varieties of agricultural crops, of improving methods for protecting plants from pests, diseases and weeds and of introducing farming systems that consider zonal characteristics of agricultural production more fully.

However, from the point of view of promising goals for increasing agricultural production an exceptionally important role is played by the overall improvement in soil productivity and by an improvement in land use as the main means of production in agriculture. Accumulated scientific and experimental materials speak of the possibility of achieving, on sod-podzol soil, a productivity of 35-45 quintals per hectare of crop-rotation area translated into grain terms; on gray forest soils--no fewer than 45 quintals and on leached and typical chernozems--45-65 quintals per hectare. But this potential is utilized by less than half. Meanwhile, progressive experience in various zones of the country shows that on the basis of scientific-technical progress the productivity of agricultural crops can be increased by a factor of 1.5-2. This is convincingly confirmed by the results of utilizing an intensive technology for cultivating grain crops. By introducing more productive varieties, by sowing high-quality seed, by purposefully regulating the nutrient content of the soil, by introducing integrated plant protection from pests, diseases and weeds, by sowing crops after the best predecessors, by achieving high-quality work that includes permanent technological tracks and by utilizing intensive technologies there is significant growth in the degree of land use and in the entire bio-climatic potential of agriculture. The productivity of winter wheat, for example, increases to 50-60 quintals per hectare. Thus, in Rossiya Kolkhoz of Novo-Aleksandrovskiy Rayon, Stavropol Kray, an intensive technology for cultivating winter wheat was utilized on an area of 475 hectares in 1984. Here 55 quintals of grain were produced per hectare, which is 19 quintals more than with regular technology.

Under the influence of scientific-technical progress there is a steadfast growth in potential biological productivity of plants utilized in agricultural production. This is the most important factor in increasing the use of soil fertility for agricultural production output; soil fertility increases under the influence of fertilizer, irrigation and land drainage, chemical soil reclamation, improvements in crop rotation and improvements in soil-cultivation methods and other directions of scientific-technical progress in agriculture. Under such conditions in addition to a high level of potential productivity and other economically-valuable characteristics, plant varieties must be very responsive to improved soil preparation, be resistant to lodging and yield high-quality products.

On the other hand, an improvement in soil fertility is one of the decisive factors in more fully utilizing the biological potential of cultivated agricultural crops; without this, biological potential is utilized by 50-70 percent. In addition, the potential productivity of varieties increases more quickly than actual productivity; as a result, unrealized potential productivity of plants is becoming more and more significant. In confirmation we can present data on productivity on state variety plots and production sowing areas. In 1951-1960 the productivity of grains on variety plots equalled 17.6 quintals per hectare and on production plots--9.1; in 1961-1970--21.1 and 11.9 quintals per hectare respectively; and in 1971-1980--29.7 and 15.3 quintals per hectare. Differences in productivity of grains cultivated on variety plots as compared to those on production plots increased from 8.5 quintals per hectare in the 1950's to 14.4 in the 1980's.

The USSR Food Program and decisions of the October 1984 Plenum of the CPSU Central Committee foresee further growth in the role of land reclamation in increasing agricultural production output. Land reclamation is most important for increasing the production of grain (especially corn), feed and vegetables.

At the plenum it was emphasized that under conditions of expanded reclamation building it is exceptionally important to raise the effectiveness of utilizing reclaimed lands and to curtail the time needed to achieve planned productivity on them.

Growth in effectiveness of utilizing reclaimed lands requires an improvement in the technical level and quality of water management building, comprehensive implementation of land reclamation work, agricultural assimilation of this land, supplies of the full complement of fertilizers having the required ratio of nutrients for reclaimed lands, herbicides, and the best varieties and hybrids of agricultural crops. Methods of programmed cultivation of agricultural crops must be utilized widely on reclaimed lands.

Until recently intensive factors have not been utilized sufficiently in the development of livestock raising. Growth in the livestock herd and not an increase in livestock productivity was more important in increasing livestock production output. In 1981-1983 in all categories of enterprises average annual volume of livestock products surpassed 1961-1965 levels by 60 percent. About 60 percent of total growth in agricultural production output results from growth in the size of the herd and 40 percent--from an increase in the productivity of animals.

The development of livestock raising is hindered primarily by lags in the feed base. Average annual feed expenditures per standard head of cattle equalled 25.9 quintals of feed units in 1981-1983. In leading enterprises as well as in foreign countries utilizing intensive livestock raising feed expenditures per standard head of cattle reached 40 quintals of feed units and more. Under conditions of a high-grade feed base and corresponding breeding work the necessary growth in agricultural production output can be achieved with a decreasing or stable herd of cattle, which will enable us to increase the effectiveness of livestock raising.

Agriculture develops intensively from the point of view of the effectiveness of utilizing the most important aspects of its production potential--labor resources. In contrast to a number of other branches of the national economy, growth in agricultural production is implemented by means of curtailing the number of workers thanks to growth in labor productivity, which is achieved by decreasing the technological labor-intensiveness of production output on the basis of raising the level of mechanization of agriculture and of expanding the scale of utilizing industrial technology as well as of growth in productivity of agricultural crops and of livestock. Labor productivity in public agriculture increased by a factor of 1.9 in 1981-1983 as compared to 1961-1965 (according to the indicator for production output per average annual worker); the number of agricultural workers dropped from 25.8 million persons in 1965 to 22.9 million in 1983.

The resolution of the CPSU Central Committee and USSR Council of Ministers, "On Measures for Accelerated Scientific-Technical Progress in the National Economy," especially emphasizes the necessity to cardinally improve labor productivity. The solution to this problem must be a priority in carrying out all work related to accelerating scientific-technical progress. This applies fully to agriculture as well, which still lags behind industry in the growth rate of labor productivity. During the last three five-year plans there has been a 1 percent increase in labor productivity in industry and a corresponding growth of 0.75 percent in agriculture.

Productivity in agricultural labor increases primarily by means of increasing production output per unit land area and per head of cattle. The technological labor-intensity of production decreases, but at a slow pace. During the last three five-year plans about one-third of the increase in total volume of labor productivity has been achieved by decreasing industrial labor-intensity and the remainder--by increasing the productivity of agricultural crops and livestock.

The USSR Food Program established the task of increasing labor productivity in agriculture by a factor of 1.5 during the 1980's. This requires achieving a significantly higher average annual growth rate than in recent years. On this basis there will be a further absolute and relative curtailment in the number of agricultural workers. Consistent industrialization of agricultural production, signifying a transition to production on the basis of machine technology, will become of decisive importance.

The experience of introducing industrial technology to produce grain, corn, sunflowers, sugar beets and other crops, which began in 1977 and which yielded labor expenditures that were less by a factor of 3-5 per unit of production than average kolkhoz and sovkhoz indicators, opens up great possibilities for increasing labor productivity.

Confirmation of the fact that the industrialization of agricultural production enables us to increase labor productivity at a more rapid pace than in recent years can be found in the growth in labor productivity in poultry-raising achieved during the period of a mass transition of this branch to an industrial base. In the country's sovkhozes average annual labor productivity increased by a factor of 6.8 in 1976-1980 as compared to 1961-1965, and its average annual growth over a period of years equalled 13.7 percent with an annual growth pace of 4 percent in public agriculture as a whole.

The implementation of scientific-technical progress in agriculture is accompanied by an expansion in nomenclature and by an increase in the scale of use of material-technical resources. Branches of industry supplying agriculture with the means of production are formulating the conditions and influencing the results of agricultural production to a greater and greater degree. The volume of material-technical resources used, which has increased sharply in recent years, has more and more of an effect on the economies of kolkhozes and sovkhozes. One of the more important phenomena is the change in the relationship between individual expenditure elements for agricultural production output. There is a decrease in the proportion of wages and an increase in that of material expenditures. In 1965 there were 1.09 rubles of material expenditures per ruble of wages in public agriculture; in 1982--1.93 rubles of material expenditures.

Within the general structure of material expenditures there is a decrease in the proportion of expenditures for means of production obtained within agriculture itself and an increase in means of production arising from industry. Whereas in 1961-1965 industrial products comprised 32.1 percent of total material expenditures in public agriculture, in 1981-1982 the figure was 44.4 percent.

A significant portion of these expenditures, translated into monetary terms, is not related to growth in the use of actual material-technical resources but to increased costs of the latter. Nevertheless, even with a consideration of this factor the proportion of material expenditures turns out to be very significant and is increasing constantly, which rightfully reflects progress in production forces of the agro-industrial complex and a strengthening of the role of industry in agricultural development. All of this provides the basis for the necessity to make a transition to intensive growth factors in agricultural production from the point of view of utilizing not only land and labor but also material-technical agricultural resources. It should be kept in mind that the problem of increasing the effectiveness of utilizing material-technical resources to a large degree determines the content of the intensification process in agriculture on the whole.

At the present time the sum total of fixed production capital in public agriculture exceeds 1965 levels by a factor of 4.5. Its increase significantly forestalled growth in agricultural production output, the average annual volume of which increased by 54 percent in 1981-1983 as compared to 1961-1965. This resulted in a drop in indicators on output-capital ratio. There was a decrease in the amount of production per 100 rubles of material turnover funds in agriculture.

However, a drop in the amount of production per unit fixed or working production capital does not mean that the economic effectiveness of utilizing these agricultural funds decreases by the same degree. The indicator of output-capital ratio, taken apart from use indicators of other production resources, does not consider growing return on land and the freeing of the work force from agriculture.

A higher growth rate of production funds as compared to the growth rate of gross agricultural production can be explained firstly by the special characteristics of agricultural production in the course of the last two decades, accompanied by the development of a powerful material-technical base without which the extensive use of modern intensive technologies, the comprehensive mechanization of agricultural production, expanded reproduction of soil fertility, large-scale agricultural management on reclaimed lands and sufficient livestock-raising facilities, capacities for processing and storing products, and technical servicing and repair of machines in kolkhozes and sovkhozes would not be possible. At the stage of accelerated formation of a highly developed material-technical base for agriculture we cannot achieve a direct relationship between the growth of fixed production capital and production output.

One of the main reasons for a drop in the output-capital ratio has to do with the fact that a significant portion of increased costs in fixed and working capital is not related to the intensification of agriculture but results from the increased cost of new production resources which are not compensated for by an increase in the useful effect of corresponding resources. In agriculture as a whole about 50 percent of total growth in the capital-output ratio of production results from the increased cost in fixed production capital.

The objective necessity to improve the structure of agricultural production and to supply it with the corresponding material-technical base provided the basis for a rapid increase of production building in recent years. The share of buildings, structures and intermediary structures found within agricultural fixed production capital increased from 48.5 percent in 1965 to 64 percent in 1983. There was a sharp increase in the scale of reclamation building. The use of production facilities, reclamation structures and other similar objects is intended for the long-term and this also affects the output-capital ratio to a significant degree.

A drop in production output per unit of fixed capital is determined to a significant degree by the insufficiently high quality of means of production manufactured by industry and by their incomplete supply to agriculture. The nomenclature and selection of working machines does not permit us to fully

load the tractors available to enterprises. The production of new machines which have successfully passed state testing is being assimilated slowly. As a rule, actual dependability and durability of machines being produced are lower than the norm; many break down ahead of schedule. Instead of a machine system for complex mechanization, industry supplies individual and separate machines or incomplete sets of machines, which does not allow us to utilize more progressive industrial technologies.

A drop in production output by 1 ruble of production funds is also based to a certain degree on the slow assimilation of livestock-raising complexes, reclamation systems and other basic means of production.

In order to improve the relationship between growth of fixed production capital and gross agricultural production it is essential to implement a system of measures directed, on the one hand, at decreasing the cost of the means of agricultural production, the amount of which must increase, and on the other hand--at increasing the volume of farming and livestock production output. Increasing prices for agricultural technology and other means of production can be allowed only when the growth of a useful economic effect in agriculture will forestall increased costs.

It is essential to achieve optimal proportions in the composition of a material-technical base for agriculture. The production and delivery of tractors and agricultural machines should be implemented comprehensively, with a consideration of the introduction of progressive technology.

Basic production funds in agriculture must be provided for by means of working capital in accordance with existing norms. In recent years, the growth of material working capital has lagged behind the growth of fixed production capital. Whereas in 1970, 52 rubles of material working capital were required per 100 rubles of fixed production capital, in 1983 the corresponding figure was 39 rubles. At the present time agriculture underproduces by a significant amount, especially as regards grain and feeds, due to inadequate fertilizer supplies. It suffers great losses as a result of insufficient supplies of herbicides and of the means for combatting pests and disease. Lags in the feed base hinder increased productivity in livestock raising. There are instances of long-term equipment idleness due to the absence of spare parts and to the untimely delivery of fuel. For this reason the elimination of disproportions between fixed and working capital is the most important condition for increasing the effectiveness of production funds.

Simultaneously, we must more fully utilize the internal possibilities of agriculture to obtain a maximal return on the material-technical resources allocated to it.

Kolkhozes and sovkhozes have at their disposal large reserves for the more effective use of tractors and agricultural machinery. By utilizing shift time more efficiently it is possible to increase the output of units on a number of field operations by a factor of 1.5-2 as compared to average indicators. However, the effectiveness of utilizing technical resources has a tendency to decrease. For example, agricultural production output per horsepower of

energy capacity equalled 351 rubles in 1966-1970, 288 rubles in 1971-1975, 225 rubles in 1976-1980 and 193 rubles in 1981-1983.

The Food Program established the goal of increasing daily output of tractors, harvesters and means of transportation by 20 percent by 1990. Meeting this goal requires an improvement in organizational forms related to utilizing, technically servicing and repairing agricultural equipment; the widespread use of specialized technical servicing of machines and equipment; and bringing service centers closer to places where agricultural equipment is used. We should accelerate the introduction of dispatcher management systems.

The expansion of fertilizer use must be accompanied by an improvement in effectiveness of this use. Strict adherence to scientific recommendations relative to dose, schedule and methods of application, with a consideration of zonal characteristics and agrochemical properties of the soil in coordination with other agrotechnical methods, enables us to increase the effectiveness of mineral fertilizers by 15-20 percent. The elimination of fertilizer losses incurred during transport, storage and application into the soil is equivalent to increasing fertilizer deliveries by 10-13 percent.

The Food Program foresees increasing return on the use of mineral fertilizers and other means of chemicalization by about 12-15 percent during the current five-year plan. Increasing the role and responsibility of the agrochemical service is of priority importance in the more effective use of fertilizers. It is essential to achieve a comprehensive solution to all questions of chemicalization in which the expansion of production and delivery of mineral fertilizers is closely linked to supplying enterprises with the necessary means of mechanization, to the creation of suitable conditions for storing mineral fertilizers and for correctly organizing the use of organic fertilizers, to a precise agrochemical survey, to the training of cadres, to the liming of acidic soils, to the implementation of the necessary measures to protect plants from pests, diseases and weeds and to the efficient building of the entire farming system.

Of exceptional importance for the national economy is the efficient and more effective use of feed in livestock raising. At present, overconsumption of feed equals 20-40 percent over scientifically-based norms for the production of a unit of livestock product. The improvement of feed utilization in livestock raising is related first and foremost to an improvement in the general level of feeding and to growth in productivity of animals as well as to improvements in the balance of protein and other nutrients in rations.

It is possible to successfully solve the tasks facing agriculture only on the basis of a systematic approach to dealing with the problems of scientific-technical progress. The introduction of scientific achievements which are related to each other within a single complex of measures has proven itself well in a number of the country's regions.

The implementation of a principle of comprehensiveness and the strengthening of the contribution of science with regard to meeting the goals of intensification and of increasing the effectiveness and stability of agricultural production are facilitated to a great degree by the elaboration

and introduction of scientifically-based systems of agricultural management. They represent the sum total of measures and means that are directed at increasing agricultural production output and at the fuller and more effective use of resources. These measures encompass all aspects of agriculture--economy, organization, techniques, equipment and so forth.

The development of science and technology and the improvement in production forces and relations is accompanied by changes within the system of agricultural management; new problems and new solutions arise.

In the course of recent five-year plans scientific-research facilities, together with specialists involved in agricultural production, have been carrying out elaborations on scientifically-based systems of agricultural management and perfecting them for various zones in the country in a planned manner and according to a common methodological base. During the current five-year plan recommendations are being prepared for oblasts, krays and autonomous republics. They must be provided in the form of a model of efficient agricultural production and must be the basis for the optimal building of a system of agricultural management on the level of the enterprise. This will enable us to provide a more specific foundation for all elements of a system of agricultural management and to assimilate these elements more quickly in production.

The introduction of scientific achievements related to each other within an efficient system of agricultural management has proven itself well in a number of the country's regions. For example, in many enterprises of Stavropol Kray with the help of such systems it has been possible to mitigate the negative effects of unfavorable weather conditions that are characteristic of dry steppes, to increase the productivity of agricultural crops and to raise their resistance. On the average for the years of the 10th Five-Year Plan 23 percent more grain was harvested in the kray than during the ninth. Production growth has been achieved during the 11th Five-Year Plan as well.

Highly effective intensive and industrial technologies are becoming more and more widespread in production. Also at their base is the comprehensive use of achievements of scientific-technical progress in the area of agricultural mechanization, selection of agricultural crops, chemicalization of farming, protection of plants from pests, diseases and weeds, the organization of labor and production, and so forth. It is thanks to this circumstance that industrial technologies receive significant advantages over many other scientific elaborations which deal with individual, even important, problems from the point of view of the needs of agricultural production.

However, on the whole production organization on the basis of integrated systems, encompassing all basic links of the production cycle, still have not become sufficiently widespread. Individual technological elements often cannot be coordinated with each other.

For example, the introduction of new, high-yield varieties of agricultural crops often requires a change in cultivation methods (sowing schedule, selection of predecessors, and methods of soil cultivation, fertilizer

application, harvesting and so forth), but enterprises do not always have recommendations on these questions.

Progressive technologies for agricultural production output sometimes are not coordinated with promising machine systems or with work to develop new technology. For example, it is not enough to provide a foundation for the principles of flow-line harvesting of grain (feeds, potatoes and so forth); this foundation must be reinforced by the corresponding technical means.

Great losses to agriculture are incurred by the gap in efforts to develop and deliver new tractors and complementary agricultural machines for them. Sometimes the outfitting of newly-arrived tractors with machines of the appropriate class extends over a period of many years in kolkhozes and sovkhozes.

The highly productive use of new technical resources often becomes impossible within the framework of previous forms of labor and production organization. Nevertheless, the combination of qualitatively new machines and outdated organizational methods for their use is not an infrequent phenomenon. Here lack of coordination in the development of different sides--in the given case, technical and organizational factors of agricultural production development--also has its effect. In addition, new ideas are embodied in means of production supplied to agriculture by industry with insufficient speed.

The most important condition of scientific-technical progress in agriculture is the continued development of scientific research on the main problems related to increasing agricultural production and its effectiveness. Native agricultural science extensively implements research with a consideration of production needs. Many of its achievements have become bright examples of the transformation of science into a direct agricultural force.

The implementation of scientific-technical progress in agriculture, as in the national economy as a whole, is determined to a large degree by the effectiveness of economic factors. Scientific ideas will be embodied in production only when they correspond to practical demands. While improving the management mechanism we must simultaneously improve methods of planning and material stimulation of scientific-technical progress. This is an essential condition for the rapid assimilation of scientific-technical achievements in production.

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KUBAN' EXPERIMENTAL APK IN KRASNODAR KRAY

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[Interview by A. A. Dergachev with Mikhail Mikhailovich Lomach, General Director of the Kuban' Experimental Agro-Industrial Combine [APK] and former director of the Krasnodar Kray Agricultural Administration: "Production, Processing and Trade in the Same Hands/This is the Way the Kuban' APK Operates"]

[Text] Let us refresh the reader's memory--last summer a decision was made to create the Kuban' Experimental Agro-Industrial Combine. The purpose of the experiment is to perfect a closed organizational-economic structure which enables us to concentrate the production, storage, processing and sale of food products in the hands of a single enterprise, thereby eliminating the middleman. Moreover, sales are foreseen according to two channels--the sale to the state of a specific portion of products on the account of union-republic deliveries according to existing procurement prices, and the sale of the remainder through a network of the enterprise's own company stores according to prices confirmed by the APK council.

In January of this year Kuban' Combine came into its own. Mikhail Mikhailovich Lomach, the former director of Krasnodar Kray Agricultural Administration, was appointed general director. Today we are publishing an interview with him by our own correspondent from Krasnodar Kray, A. A. Dergachev.

[Dergachev] Mikhail Mikhailovich, I recently visited your company store--the one that was opened in the Komsomol'sk Micro-district of Krasnodar. The first impression is that consumers are satisfied; there are eight varieties of sausage alone. In addition, there are inexpensive meat products made from subproducts--Sulze [a sausage], ham and others. I must admit that such an assortment does not exist in any other store in Krasnodar. I also happened to note that consumers are not only satisfied but worried as well that this store may be closed because it is so unusual.

[Lomach] We opened our store in a poorly developed micro-district in order to help new residents. About 100,000 people live there--not a small number. At the same time we wish to study demand and to determine the product assort-

ment. Please note that we sell not only meat items but also fresh vegetables, fruit, juices, safflower oil, canned goods and flour--in other words, all the necessities. For us, agricultural workers, trade is a new matter and we intend to assimilate it in a new manner and at a high level. The experience of the store in Komsomol'skiy Micro-district must help us to develop a system of company trade. I must emphasize this--company trade. In our opinion, it must include not only an uninterrupted supply of products but its own service as well.

We are pleased that our products are already available to the consumer. But when we establish prices we keep up with how production and sales expenditures are reimbursed. Three months of experience have satisfied us--the profitability level equalled 9 percent.

[Dergachev] Yes, but your prices are higher than those in state trade.

[Lomach] This is true. We establish prices with a consideration of existing norms, the cost of raw materials and all other expenditures. Let me note, for example, that the cost of that sausage at our Medvedovskiy Meat Combine is not a bit higher than that in neighboring Krasnodarskiy Meat Combine. All the rest of the expenditures for the production and sale of products are the same. But our delivery prices are higher than the state's. Why? It is possible that not all readers are aware than the stable low retail price for meat articles found in state stores is regulated by means of a small subsidy (supplement) from the state budget. And when the combine council establishes prices for articles, as you yourself understand, it must consider the cost of production. Even to a non-specialist it is clear that without profits we cannot expand production. Incidentally, these same real expenditures are considered in the so-called "commercial" price in stores belonging to consumers' cooperatives. However, our prices are somewhat lower than those in cooperatives. At the same time, we have been assigned the task of systematically decreasing expenditures at all stages of production, processing and sale of products. In the final analysis, this will enable us to systematically decrease the sales price for those sausages. And the logical conclusion to the experiment must be the production of food at a cost that will enable us to sell it at prices close to state prices, but without a ruble of subsidies from the budget.

[Dergachev] But is this obligation to both produce and trade burdensome?

[Lomach] Of course there are more concerns. But we continue to trade. This is our specialty. We trade and at the same time fulfill plan deliveries for union-republic funds. Moreover, our combine provided 46 tons of "Russian tea" and 54,000 mink skins for export. Talks are being carried out with Vneshtorg [USSR Ministry of Foreign Trade] about the sale abroad of Kuban' honey, beeswax, vegetable fat, bee chyle and other products.

However, let us return to the internal market. According to a temporary resolution on the Kuban' APK we are obliged first and foremost to supply spas of the Black Sea shore of the Caucasus, primarily Sochi. This year we will open several of our own company stores in Sochi; their assortment of food products will be significantly greater than in Krasnodar.

Our combine consists of 56 enterprises and organizations, including 24 kolkhozes and sovkhozes as well as interfarm enterprises, associations of Sel'khoztekhnika [Agricultural Equipment Association] and Sel'khozhimiya, and building, supply, processing and transport enterprises. All of them were removed from their ministries and departments and made subordinate to the Kuban' APK council. In addition to the enterprises of Timashevskiy Rayon the combine includes the sovkhozes of Sochi's Krasnodar Tea Production Association, the Dagomyskaya and Adlerskaya tea factories, Tuapsinskiy State Fur Farm and a planning-technological institute created on the basis of an affiliate of Kray-kolkhozproyekt [Kray Kolkhoz Planning Institute]. There are 43,000 persons working in the combine. The annual volume of product sales is 365 million rubles.

I would like to say a few words about the specific features of the APK. For example, our agro-industrial department coordinates not only the cultivation and harvesting of agricultural crops but their processing as well. The livestock raising department is involved in the feeding and upkeep of livestock and poultry as well as in the processing and sale of products and in bringing them up to marketable form. In other words, these departments deal with all problems in a comprehensive manner. The end result is not the quintal of the collected harvest or the weight gain but food products which are the result of processing.

It is not difficult to become convinced of the fact that now we find ourselves in a situation heretofore unknown to us. Everything will depend on the quantities of sausage, honey, ice cream and other products we produce.

[Dergachev] As far as I know, the combine also thinks about both the quintal and the gross. For example, it sets itself the goal of obtaining stable wheat yields of no fewer than 50-55 quintals and corn yields of 100-120 quintals per hectare as well as of sharply increasing the productivity of livestock raising. Already today, the production base existing in Timashevskiy Rayon does not have the capacity to process, preserve and sell all the products supplied by agriculture.

[Lomach] Unfortunately, this is true. In essence, we must create a new industry for processing agricultural products. The priority objects to undergo new building are plants for firm and soft packaging, enterprises for processing sunflower seeds and milk and for producing frozen foods, juices, candy and other products. It is planned to build eight and renovate three objects. This will enable us to increase the output of food products by about 200 million rubles in the shortest possible time.

Moreover, the plan for the next, the 12th, Five-Year Plan, calls for the assimilation of 300 million rubles of capital investments allocated by the RSFSR Ministry of Agriculture for the building of housing, roads and social-cultural objects.

[Dergachev] Mikhail Mikhailovich, you evidently have come across difficulties related to eliminating the inertia of outdated concepts and imperfections in the management mechanism. But who knows, perhaps every cloud has a silver lining--those who come after you will know about these difficulties ahead of time.

[Lomach] Possibly. Everything that is new includes in itself all accumulated experience and at the same time requires changes in outdated management principles. This is more difficult. At first we had to prove the rightfulness of our actions to many, referring to the temporary resolution on the Kuban' APK, according to which we have the right to both plan and sell our products. Departments and ministries have not become used to this and at the beginning of this year all of the enterprises of our APK were assigned the types and quantity of products to produce and where to sell the goods at what price--the ministry's "fly-wheel" was turning. Unfortunately, the comrades from these departments did not study the resolution about our experiment and this means that they did not establish their role in carrying the resolution out.

There were others who managed to "find their place," but in their own way. They tried to "pluck" the enterprises which joined the Kuban' APK. Let me cite a few examples. For no reason at all, the RSFSR Minpishcheprom [Ministry of the Food Industry] took back three of the five tanks which were previously serviced by the Timashevskiy Rayon Food Combine. This affected the scheduled delivery of viniculture materials to consumers. Specialists from RSFSR Minmaysomolprom [Ministry of the Meat and Dairy Industry] acted in a similar manner. They "gave" us their Medvedovskiy Meat Combine, but stopped the delivery of refrigerated cars.

Or how are we to understand RSFSR Minsel'stroy [Ministry of Construction]? It is our general contractor. We expected it to sharply increase the capacity of its PMK [Mobile mechanized column] base, which is located in Timashevskiy Rayon--this year it is to fulfill building-installation work valued at 5 million rubles! For this increased volume USSR Gosplan allocated mobile mortar units and other necessary equipment. But they never reached Timashevskiy Rayon.

In other words, it is not that easy to eliminate departmental loyalties. But still I wish to remind you once again that the resolution on the combine establishes our tasks and possibilities with sufficient clarity. It gives us great rights and exacts a greater degree of responsibility on our part as well as on the part of departments participating in the development of the combine.

[Dergachev] At its foundation the Kuban' Agro-Industrial Combine is an agricultural enterprise. After a severe winter it is living through its first spring. How did you prepare for spring?

[Lomach] We have a clear, fairly strict program. There is no need to dwell upon our unique technological features. I will say one thing--we operate according to a single plan. All 56 enterprises are subordinate to the Kuban' APK. What to sow, when to sow, how to harvest and where to store, process and sell it--these matters are up to APK enterprises. We know that our work will be judged only by the quantity and quality of products which we offer in the stores of the spa zone on the Black Sea Coast of Krasnodar Kray. And this is not only a test of maturity but also of loyalty to the land.

Man is one on one with the field; he feels great responsibility for the people he must feed especially acutely. This responsibility can be compared to no other.

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BELORUSSIAN POTATO PRODUCTION, SUPPLY PROBLEMS CONSIDERED

Minsk NARODNOYE KHOZYAYSTVO BELORUSSII in Russian No 3, Mar 85 pp 22-23, 26

Article by I. Terashkov, scientific secretary at Scientific Research Institute of Economics of BSSR Gosplan, and I. Chuyevskiy, senior scientific worker at Scientific Research Institute of Economics of BSSR Gosplan; candidates of economic sciences: "Various Fates of Secondary Grain"/

Text Vegetables the year round. The proverb "For each vegetable -- its own time" has clearly become obsolete. It no longer applies for us consumers. The potential possibilities (economic, technical, technological and, finally, organizational) of the entire agroindustrial complex make it possible today to supply the dining tables of citizens with adequate quantities of vegetables the year round. The difficulty lies in the fact that all of these potential possibilities must be activated and placed in motion. This must be done in all elements of the APK /agroindustrial complex/ without exception.

It can be stated directly: by no means are our possibilities being utilized fully. The work concerned with the production of vegetables and supplying them to the population requires improvements, it was emphasized during a republic meeting of the party-economic aktiv on 5 December of last year. By no means is full use being made of a special program that was prepared for developing vegetable production. Just as in the past, the assortment of vegetable products remains limited, interruptions are being tolerated in the vegetable trade and a great amount of criticism is being heard regarding the low quality of the vegetables being delivered to the stores. The infancy and adolescent period of the republic's Ministry of the Fruit and Vegetable Industry were dragged out unjustifiably. Belkoopsoyuz /Cooperative Union of the Belorussian SSR/, which long ago forgot the period of its development, is also not participating in this very important work.

There are many problems of both an objective and subjective nature. Prior to undertaking a thorough discussion of them,

the journal's editorial board would like to clarify some of the more urgent problems.

In the selection of materials which we are publishing in this issue, the range of problems concerned with improving the supply of vegetables and fruit for the population is only outlined. We invite the scientists, specialists and interested individuals to express their opinion in this regard.

One trend with regard to specialization within the agroindustrial complex of Belorussia -- the production and processing of potatoes. We have achieved undeniable successes in this regard. But even in our republic, the work concerned with supplying the population with high quality potatoes and diverse products is lagging behind the demand. The branch's constantly increasing expenditures are not justified. The yields are increasing only slowly. There is a shortage of highly valuable varieties for use for food purposes. Tuber losses are great during both harvesting operations and storage. The plans for supplying potatoes for industrial processing are not being fulfilled. On many farms the efficiency of potato production operations is generally low.

Here are some figures. During the 10th Five-Year Plan, the republic's kolkhozes and sovkhozes produced 31.7 million tons of potatoes, the amount called for in the plan. This was on the whole. But in Vitebsk Oblast, one fifth of the amount planned was not obtained and the tasks assigned to workers in Grodno and on farms of Glavplemupravleniya and Glavzhivprom were underfulfilled.

The volume of potato purchases in the public sector amounted to only 84.5 percent of the program. Only the kolkhozes in Minsk Oblast fulfilled their five-year plan for the sale of tubers.

And the difficulties associated with carrying out the plan for purchases of the "secondary grain" did not disappear during the 11th Five-Year Plan. For example, compared to 1973 when table varieties constituted 23.1 percent of the potatoes procured for food purposes, in 1983 -- 29.7 percent. The increase was negligible.

Up until now, food potatoes have followed a very complicated path to the consumer. True, approximately 100,000 tons annually are shipped directly from fields to the stores: this method produces savings in labor expenditures and in the use of transport equipment and it reduces losses to a minimum. However, an increase in the potato delivery volumes using the mentioned method is limited by the summer and autumn seasons and by the low capabilities of storehouses at the stores. Thus the principal amount of food potatoes is delivered to stores using other methods. Each year, approximately 300,000 tons of tubers are placed in storage for the retail trade. The principal amount -- in storage at the trade organizations and approximately 12 percent -- in simple clamps and trenches. A positive fact: 18 percent of the tubers are stored in containers, two thirds of which are placed in storehouses having artificial cooling. Each year, approximately 10,000 tons are kept in a controlled gas environment.

Analysis reveals that practically all of the food potatoes are shipped to cities throughout the republic and also beyond its borders during the harvest period.

Such practice protects the trade organizations against all types of unexpected developments. But at the same time it involves large expenses and thus is very costly. First of all, a requirement exists for transport vehicles at a time when there is an urgent need for such vehicles for carrying out other types of important work. The potatoes are shipped in haste following poor sorting and with considerable impurities. And how many motor vehicles are required for transporting the low quality tubers, following sorting at the bases, back to the rural area where they will be fed to the livestock?

The creation of storehouses in the production areas, at least for one half of all of the potatoes required for the municipal population, would have a noticeable effect. It is noted: by transporting only sorted potatoes to the city and using sub-standard tubers at the sites, it should be possible to lower transport expenses and reduce the man-power requirements during September and October by 20 percent.

Considerable reserves for realizing savings are embodied in the correct organization of potato storage operations. Moreover, it must not be forgotten that many tubers are damaged during mechanized harvesting and transport operations and that the traditional methods of preservation, be they at kolkhozes, sovkhozes or procurement organizations, do not protect against large losses. In particular, this applies to seed and food potatoes. When improperly stored, one fifth of the product is lost. The use of a progressive technology makes it possible to reduce this figure to 6 percent. Here we have in mind mainly ground potato storehouses with forced ventilation. The annual economic saving realized from the use of this method is 16-20 rubles per ton of product.

But in our republic, a large portion of the potatoes is still being stored in clamps or trenches. It is a labor-intensive method that requires 250,000-500,000 tons of straw for covering, as a result of which a reduction takes place in the forage resources.

Certainly, the storehouses are ideally erected on farms specializing in potato production. As needed, the tubers are sorted there and thereafter delivered directly to the trade network. This method reduces the number of unnecessary transport operations and the spoilage of potatoes and it lowers expenses for storing the potatoes. An improvement is realized in the quality of the products being sold and resources are utilized in a more efficient manner. The experience accumulated on a number of farms in Belorussia, in Leningrad, Moscow and Odessa oblasts and in the GDR underscores its high effectiveness.

The present overall storage capacity is such that less than one half of the potatoes available for food purposes can be stored. There are practically no storage facilities available for seed. Thus the task has been assigned of increasing the storehouse capacity to 1.4 million tons. However, this question is being addressed only slowly at Minsel'khoz [Ministry of Agriculture] and Minpredoovoshchikhoz [Ministry of the Fruit and Vegetable Industry] for the BSSR. The agroindustrial associations in the republic have created the prerequisites for changing the situation. Nevertheless, the cycles for the production,

procurement, transporting, storage, processing and sale of the products and also for servicing these processes are still being hampered by departmental isolation. For example, Minsel'khoz, Minplodoovoshchkhkhoz, Minzag /Ministry of Procurements/, Minpishcheprom /Ministry of the Food Industry/ and Mintorg /Ministry of Trade/ for the BSSR, Belkoopsoyuz /Cooperative Union of the Belorussian SSR/ and Goskomsel'khoztekhnika for the BSSR participate directly in the "production - consumption" chain. In addition to the above-mentioned seven organizations, approximately a dozen more departments participate in logistical support, construction, transport operations and other services.

The organizational structure for potato production is complicated, far-flung and isolated. It has directly under its subordination 1,773 kolkhozes, 858 sovkhozes of Minsel'khoz, 132 sovkhozes of BSSR Minplodoovoshchkhkhoz, 4 agricultural enterprises of other ministries, 1.7 million families of kolkhoz members and manual and office workers. At the same time, the private plots furnish one half of all "secondary grain" being obtained.

Problems concerned with the production, procurement, transporting, storage, processing and sale of potatoes and potato products are the responsibility of the Committee for Problems of the Agroindustrial Complex of the Council of Ministers for the BSSR, to which the ministries and departments included in the APK and six oblast agroindustrial associations are directly subordinate. In addition, a number of enterprises, organizations and associations throughout the republic that are engaged in seed production and the production of potato products are subordinate to two union ministries. Although the vertical and horizontal relationships between partners in the republic's APK /agroindustrial complex/ have merged somewhat, nevertheless departmental isolation has still not been overcome completely. And this is adversely affecting the ability to satisfy the demand for potatoes and potato products of a broad assortment and high quality and also the results of the economic activities of kolkhozes, sovkhozes and industrial enterprises engaged in producing potatoes for food and technical purposes. The role played by rayon and oblast agroindustrial associations in solving this very important role is not always noted.

Just as soon as our agroindustrial complex was formed, it was required to provide a truly all-round solution for the problems concerned with the production, procurement, transporting, processing and sale of potatoes. Experience is available on centralizing a number of functions in the new organs of RAPO /rayon agroindustrial association/ management for capital investments, construction and the modernization of potato storehouses and potato processing enterprises and this experience should be developed further.

Within the overall system for administering potato production operations, a leading role is played by BSSR Minsel'khoz. Its structure includes the Department of Potatoes of the Main Farming Administration and the Belorussian Order of the Red Banner of Labor Scientific Research Institute of Potato Production and Fruit and Vegetable Production. The most important recommendations for the production of potatoes are developed by BelNIIKPO and approved by BSSR Minsel'khoz. This same institute is engaged in the breeding of new potato varieties. But the propagation, procurement and sale of potato seed is the responsibility of the Belsortsemovoshch Association, which is subordinate to the BSSR Ministry of the Fruit and Vegetable Industry.

There is still one other problem. The USSR Food Program established the task of completing the creation of specialized zones for the production of marketable potatoes on an industrial basis, particularly in the Belorussian SSR, in oblasts of the nonchernozem zone of the RSFSR and in the Baltic republics. The plans for the 11th and 12th five-year plans call for stable gross potato yields to be obtained in volumes of 12.5-13.5 million tons, with the yields being raised to 217 quintals per hectare throughout the Belorussian SSR as a whole.

These are impressive figures. But what use is presently being made of the potatoes being produced at agricultural enterprises? One third are being sold to the state and 26 percent are being held for seed purposes. Roughly 35 percent of the potatoes are used for feed purposes. In previous years, livestock husbandry consumed an even greater proportion.

Such use of potatoes should not be considered advisable for the following reasons. The country's requirements for "secondary grain" are not being satisfied completely. Evidence of this -- the high market prices for potatoes in many cities: in recent years, the average price for the USSR has been 80-87 kopecks per kilogram and in some areas -- as much as 1-1.4 rubles and higher. The processing of potatoes into alcohol has been reduced to a minimum mainly owing to limited potato resources; such alcohol is being produced at plants throughout the republic using mainly grain allocated by the state and this also is extremely undesirable.

In recent years, at kolkhozes and sovkhozes throughout Belorussia, the production cost for a quintal of potato feed units amounted to an average of 25 rubles and 88 kopecks, or higher by a factor of 2.5 than the cost of a grain feed unit, 3.6 times higher than hay and 2.6 times higher than haylage. The use of potatoes as feed raises considerably the production cost for meat and milk, it lowers the profitability of livestock husbandry operations and in many instances it causes it to operate on an unprofitable basis.

Obviously, approximately 1 million tons of potatoes presently being used for feed purposes should gradually be released and used for food purposes, using inter-republic exchange for forage grain or mixed feed. This measure is required owing to the fact that our republic specializes in the production of livestock husbandry products. A reduction in the feed supplies caused by withdrawing a portion of the potatoes, in the absence of appropriate compensation, will inevitably bring about a reduction in meat and milk production. An equivalent exchange would be 1 ton of grain for 2 tons of potatoes, since each hectare of land occupied by potatoes furnishes (less seed) 35-40 quintals of feed units and a hectare occupied by grain sowings -- 17-18 quintals.

A considerably greater quantity of tubers must be used within the republic for the production of starch, dehydrated potatoes, crackers, grits and other products. However the solution for this problem will depend mainly upon increasing the production of potatoes having the qualities required and also the capabilities of the processing industry. As yet, the rates for intensifying this production continue to remain low.

In connection with increasing cropping power and gross yields, improving the quality of the potatoes, achieving a sharp increase in the production of potato products and lowering the losses of this most valuable raw material, a dominant role is played not only by all-round mechanization of all technological processes throughout the entire cycle "production - procurement - storage - processing - sale" of potatoes based upon the use of modern equipment, but also upon improving the forms for administration and economic relationships. The experience accumulated by a number of kolkhozes and sovkhozes has convincingly proven the advantages to be realized from the creation of permanent cost accounting brigades and teams, which work on the basis of a collective contract, the job contract plus bonus wage system and temporary advances. Strict observance of the established agricultural practices is required in the mechanized contractual brigades and the desire on the part of some executive agents to over-fulfill their shift output norms by lowering the quality of their work is eliminated. Throughout the ministry as a whole, the potato yields were increased last year to 172 quintals per hectare. It was by no means an accident that the strengthening of cost accounting relationships and an expansion in independence at many sovkhozes of the BSSR Ministry of the Fruit and Vegetable Industry made it possible to achieve considerable successes. The plans for the gross production and sale of potatoes to the state were fulfilled. Fine yields were obtained in 1984 by the sovkhozes Minskobplodovooshcha -- 194 quintals per hectare from 2,800 hectares and Gomel'obplodovooshcha -- 189 quintals from an area of 2,300 hectares. The proportion of high quality sowings increased considerably. The further specialization of farms in the production of early potatoes is continuing. Manual labor expenditures were reduced to the maximum possible degree and production costs lowered.

In short, reserves for increasing production of the "secondary grain," in order to satisfy more completely the requirements of the workers, are to be found at all levels. Actually, the task consists of not postponing the placing of these reserves in operation. Radical improvements are required in the administration of potato production and consumption operations. Certainly, measures are required for ensuring the efficient use of capital investments being made available for implementing the Food Program.

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PROBLEMS OF BELORUSSIAN SUBSIDIARY FARM DEVELOPMENT

Minsk NARODNOYE KHOZYAYSTVO BELORUSSII in Russian No 3, Mar 85 pp 10-21

/Article by Yu. Kulikov, chief of the Subsidiary Farm Section of BSSR Gosplan:
"Subsidiary -- Not Secondary"/

/Text/ It is written in the USSR Food Program: with kolkhozes and sovkhozes playing a decisive role in increasing the production of agricultural products, the subsidiary farms of enterprises and organizations should be developed for the purpose of supplementing the food resources and this work should be carried out in all areas where the conditions permit. Such farms will be of great assistance in meeting the public catering requirements of manual and office workers for meat, milk, vegetables and potatoes.

What do the subsidiary farms appear like today? Recently their number has increased by a factor of 1.5 and has reached 1,300. They produce almost 40,000 tons of meat and milk and 10,000 tons of vegetables annually, which in a conversion per worker engaged in the sphere of material production (excluding agriculture) amounts to from 5 to 10 kilograms of each product.

On the average, each agricultural department in the BSSR (not counting subsidiary farms, schools, hospitals and boarding houses) has at its disposal 55 hectares of agricultural land and it produces 12.8 tons of meat, 8.6 tons of milk and 2.1 tons of vegetables. By way of comparison, for the country as a whole these indicators are as follows: 210 hectares of land, 21.6 tons of meat, 21.8 tons of milk and 31.5 tons of vegetables. Thus, our unused potential is great. This is borne out by leading practice. For example, fine work is being performed by the agricultural departments of the Vitebsk Monolit Association, the Bobruyskshina Association and by the Lukoml'skaya GRES /State Regional Electric Power Plant/. At the Mogilev PO for Silk Fabrics imeni 25th CPSU Congress and on a farm built on the territory of the enterprise, more than 1,000 hogs were fattened and 15 kilograms of meat sold per worker.

Deserving of attention is the experience accumulated in the all-round development of the Mezhozer'ye Subsidiary Farm at Novopolotsk, which was discussed in Issue No. 1 of the journal. It has 540 hectares of land, including 330 hectares of arable land. In 1984, 93 tons of meat and 130 tons of milk were sold here. Over a period of 3 years, more than 20 installations were

erected on the subsidiary farm -- livestock facilities, dwellings, warehouses and a dining hall. The necessary agricultural equipment was acquired and improvements were carried out in the fertility of the soil and in the structure of the herd.

Nevertheless, the proportion of agricultural products being produced by the agricultural departments of industrial enterprises is still not very great. As emphasized during the 13th Plenum of the Central Committee of the Communist Party of Belorussia, a firm program must be followed aimed at ensuring that every enterprise of union or republic subordination, every organization or institute, either independently or on the basis of cooperation, participates in the production of some type of agricultural product. This is not meant to imply that literally all of them must acquire large tracts of land and create large livestock husbandry farms. This must be done in those areas where there is a food base in the form of food scraps and where such a base merely as to be augmented. But almost any collective is able to organize the production of fruit and vegetable products and rabbit breeding without encountering difficulties or obstacles. The republic's plans call for subsidiary farms to be created in 1984-1985 at each enterprise and organization having more than 500 workers and for subsidiary farms to be organized on a cooperative basis at other enterprises and organizations.

At the present time, one half of them have agricultural departments. But some leaders have adopted a passive position and are biding their time; they plan on creating agricultural departments in the middle of or towards the end of the 12th Five-Year Plan. And in some areas small hotbeds have been built and several young bulls have been acquired for the livestock facilities of kolkhozes and sovkhozes, after which a report was issued stating that the program had been carried out. This approach was employed by the Mogilev Sewing factory imeni Volodarskiy, the Grodno Factory for Glove Products, the Minsk Instrument Plant and a production association for automatic lines, Vitebskdrev Association, Soligorsk Plant for Precast Reinforced Concrete, Lida Motor Vehicle Repair Plant and the Mogilev Metal-Working Production Association. Obviously the leaders of these enterprises are not overly disturbed by the problems concerned with improving public catering services for the workers.

How is it possible to achieve real participation by comparatively small enterprises, including budgetary organizations, in the management of subsidiary farms? The best path to be followed by them is obviously that of cooperation with larger enterprises that are capable of managing such farms. And thus it is cooperation and not a mechanical or formal association that is required. First of all, a general farm must bring about a realistic improvement in the work of supplying food products for all those participating in cooperation. Secondly, each of the participants who lack the required financial and material resources must participate at least in the procurement of feed for the agricultural department. For example, in accordance with contracts with kolkhozes and sovkhozes for the cultivation and harvesting of root crops, a portion of the products obtained over and above the stipulated amount was to be turned over to the subsidiary farms for satisfying its needs and products were to be obtained in exchange for the proportion of feed applied.

The agricultural enterprises also profit from such collaboration. At the Pamyat' Il'icha Kolkhoz-Combine in Brestskiy Rayon, contracts were drawn up on such a basis: for a yield of up to 350 quintals per hectare, in addition to

the principal payment 10 percent of the gross yield of sugar beets or root crops was to be made available free of charge. If the yield exceeded 350 quintals -- 30 percent more of the additional crop. These stimuli enabled the farm, despite limited labor resources, to obtain 625 quintals of root crops and 331 quintals of sweet roots per hectare from an area of 320 hectares.

Similar agreements can be concluded for all areas with local conditions being taken into account. The text of the model contract was approved in a decision handed down by a committee of the Presidium of the BSSR Council of Ministers for APK /agroindustrial complex/ matters on 18 June 1984. It set forth the principal obligations of the parties involved, the principles to be followed in distributing the products and the accounting method to be employed.

Another trend in cooperation in the use of resources -- participation in the construction of hothouses. Experience has shown that the erection of large specialized installations is highly advisable, especially at specialized combines of the BSSR Minplodoovoshchikhoz /Ministry of the Fruit and Vegetable Industry/, which possess experience in the operation of hothouses, have trained personnel and are equipped for raising seedlings and decontaminating soil. In accordance with the approved statute, the sovkhozes and combines are obligated to supply the participants in cooperation, for satisfying their public catering requirements and for sale to manual and office workers, up to 60 percent of the gross yield of vegetables obtained from the allotment areas.

This method has already been employed in Brest and Gomel oblasts and in the city of Minsk. But in Vitebsk and Mogilev oblasts, some large enterprises such as a television plant and the Bobruyskshina and Khimvolokno production associations are creating their own hothouses on 3-4 hectares.

The area of sheltered ground on subsidiary farms of enterprises and organizations throughout the republic has reached 30 hectares this year. Taking into account the fact that hothouses under construction will achieve their planned capability, it is apparent that the area of such sheltered ground will exceed 70 hectares over the next 2-3 years and this obviously will have an effect with regard to supplying the republic's large industrial centers with vegetables.

At the same time, extremely important and useful work is being held up owing to sluggishness on the part of enterprise leaders and a lack of support by individual ministries and departments. Thus the Vitebsk Oblast Executive Committee handed down a decision calling for the construction of the Orsha Hothouse Combine using resources supplied by the city's enterprises. And several years later Minstankoprom /Ministry of the Machine Tool and Instrument Industry/, Minpromsvyaz' /Ministry of the Communications Industry/, Minlegprom, /Ministry of Light Industry/ and Minsel'stroy /Ministry of Rural Construction/ for the BSSR were unable to find the resources for share participation by their enterprises in the construction of this important installation.

Many economists still prefer to build small hothouses on their territory. Experience has shown that they are sufficiently effective and they make it possible to realize a substantial improvement in the assortment of dishes available in plant dining halls. For example, vegetable seasonings can be

cultivated successfully in them -- no special expenditures are required and the taste qualities of the dishes will be improved. But they will not be of any assistance in improving the supply of vegetables for the citizens. Concern must be displayed for expanding the network of standard storehouses. First of all, this will make it possible to avoid considerable losses in vegetable products and, secondly, more uniform vegetable deliveries will be achieved in the public catering network throughout the year.

Unresolved problems still persist in the area of accounting for the output of cooperative farms. Despite the fact that the leading enterprises are obligated to supply quarterly information to the statistical organs on the quantities of vegetables turned over to the participating enterprises, these figures are still not being reflected in an objective manner and this is cooling to a considerable degree the desire on the part of many collectives to participate in cooperation. The same situation prevails in the production of livestock husbandry products. The BSSR TsSU /Central Statistical Administration/ is already implementing improvements in the bookkeeping procedures and before long a system will be worked out.

Throughout the republic as a whole, only slightly more than 30 subsidiary farms operating on a cooperative basis have been created. They include 100 enterprises, one half of which are located in Gomel Oblast. There are still no such farms in Grodno Oblast and only one in Minsk Oblast.

Meanwhile, the operational results of a majority of the cooperative farms are quite convincing. For example, in Gomel the Machine Took Instrument Plant imeni S.M. Kirov, the Gomel'konditerprom Association, a milling combine, a grain products combine and a trust of dining halls and restaurants, using bank credit, built a complex for the fattening of 1,100 hogs in 1983. The imeni S.M. Kirov Plant erected and equipped production facilities, the trust for dining halls and restaurants -- weighing equipment and fencing arrangements and it also supplies food waste scraps for the complex, Gomel'konditerprom -- a club for livestock breeders, milling combine -- a manure removal system and the grain products combine -- an administrative-economic facility. In addition, the association and both combines supply industrial food scraps for the complex. Roughly 199 hectares were allocated for creating a feed base. In all, 70 individuals work for the subsidiary farm, including 15 at the complex. Its planned capability -- 150 tons of pork annually. This amounts to 15 kilograms of meat annually per worker -- a considerable addition to the dining table.

At times, the creation of subsidiary farms is hindered by difficulties caused by an imperfection in the normative base. Thus, in documents for regulating their activities, for example, the instructions call for appropriate resources and limits to be made available only to the leading enterprises and not to all of the participants in cooperation. This actually forces the development of small agricultural departments. Meanwhile, the creation of relatively large subsidiary farms, including on a cooperative basis, makes it possible to lower the production costs considerably. For example, practically the same grouping of machines and implements is required for cultivating 20 and 40 hectares of agricultural land and yet the production cost for the field crop husbandry products obtained from 1 hectare will differ considerably. The same holds true in livestock husbandry. Nor does it make sense to disperse the agricultural

equipment. Hence, more persistent efforts must be directed towards consolidating the farms.

The production costs of the agricultural departments are also affected by other factors. The carrying out of improvements in land, quite often land which was excluded from agricultural use, to a productivity level considered to be close to the average for kolkhozes and sovkhozes and the creation and development of the infrastructure for subsidiary farms require considerable capital investments. Subsidiary farms which failed to organize properly their herd reproduction operations purchase only pedigree livestock through the obplemzhivov "yedineniye," the prices for which are rather high. The enterprises acquire equipment at the wholesale prices for industry, which are higher than the prices established for agricultural organizations. Thus a higher production cost for the agricultural departments still does not indicate that it must be obtained an "any cost." Nevertheless, it is dependent to a considerable degree upon skilful management and upon the business-like and organizational capabilities of the leaders and specialists.

In order to reduce production costs, more extensive use must be made of the practice of carrying out work in field crop husbandry on a contractual basis. Why cannot use be made of the existing patronage relationships between enterprises on the one hand and kolkhozes and sovkhozes on the other? Workers attached to industrial production efforts have for more than 1 year now been furnishing assistance to the rural areas in harvesting the crops and in building equipment sheds, hay storage facilities and housing units. The city is furnishing considerable assistance and under the given conditions this is an objective necessity. Naturally, the supportive farms are not abandoning the agricultural departments of enterprises which are taking their first steps, but rather they are providing assistance in the form of equipment, skilled zooveterinary and agrotechnical services and organic fertilizer. For their part, the enterprises could open up in the rural areas their own branches and departments for the production of component parts and consumer goods. This would provide work for the rural population during the period between seasons and it would also expand the range of professions on the farms, where during this period there is a surplus of labor resources.

The relationships between agriculture and industry have become more stable and promising. Typically, the number of enterprises in the republic is roughly equal to the number of kolkhozes and sovkhozes.

A number of enterprises are confronted by the same situation which prevails at the Belorussian Optical-Mechanical Association, whose support farms are located in Vileyskiy Rayon and the subsidiary farm -- in Uzdenskiy Rayon. An increase takes place in fuel expenditures for transporting personnel during the harvesting period in both regions and the work does not profit. Since the patronage relationships of the municipal regions with rural regions are for the most part already developed, it is considered advisable not only to reexamine them but also to take them into account when creating new subsidiary farms. For example, 2-3 rural regions are assigned to a municipal industrial region and thus a search should be undertaken in these regions mainly for land areas and opportunities for creating subsidiary farms.

It would seem that there could be a reasonable objection to the use of such an approach: and what if it turns out that there is not enough land in these regions for the subsidiary farms? Actually, for the production of only 5 kilograms of meat per worker engaged in industry, construction of transport, taking into account the land which the enterprises have at their disposal, it would be necessary to find 100,000 more hectares of land (upon the condition that the productivity of such land would at least be at the level of 80 percent of the average productivity for the kolkhozes and sovkhozes). But taking into account the computations of specialists attached to Minsel'khoz /Ministry of Agriculture/, Minplodogvoshchkhkhoz /Ministry of the Fruit and Vegetable Industry and Mintopprom /Ministry of the Fuel Industry/ for the BeSSR and taking into account the land recommended for allocation for these purposes (and this consists first of all of tracts of land from the state forestry fund, unused lands of an agricultural nature, the lands of industrial, transport and other non-agricultural enterprises and also, by way of an exception, land which is not being employed effectively by economically weak kolkhozes and sovkhozes), only approximately 60,000-80,000 hectares of such land can be found. Moreover, there are very few such areas located with a radius of 100 kilometers of the industrial centers. If we are oriented mainly towards the production of meat, under conditions involving a shortage of the appropriate types of land, then cooperation between industrial and agricultural enterprises directed towards raising yields and feed production is simply inevitable. Moreover, it finally becomes clear who should obtain the land and from where. And thus the Mogilev Stromavtoliniya Association mailed the five letters to various regions -- some replied that there was no land, some letters were for the most part "shelved" and last year it turned out that the collective of 3,000 workers was unable to obtain more than 300 grams of meat per worker from the use of food waste scraps.

Let us now discuss the land itself. It is our principal resource and it must be utilized in a judicious manner. The problems concerned with raising the fertility of the soil must be an object of daily concern. Yet we are still encountering incidents of poor land management. In April 1983, 198 hectares of land were allocated to the Buda-Koshelevskiy Rayon Union of Consumers' Societies for the creation of a subsidiary farm, including 110 hectares of arable land. Almost no use was made of this land by the raypotrebsovuz /rayon union of consumers' societies/ and the obispolkom /oblast executive committee/ had to hand down a decision calling for it to be transferred over to the Gomel Chemical Plant.

Many enterprise leaders strive to obtain highly productive agricultural lands and they reject low productivity lands offered to them. These rejections are motivated by the fact that quarries and ravines require several years before they are suitable and meat production is required today. Actually, the current needs of enterprises are being taken into account. Of the 6,267 hectares of land allocated for the creation of subsidiary farms, 4,284 hectares were considered to be agricultural land and 2,312 hectares -- arable land. However, when allocating the areas, every attempt should be made to make use of lands which were not used earlier, exhausted peat bogs, roadside strips and land under biological recultivation.

It has already been noted that, as an exception, the withdrawal of land that is not being effectively used at economically weak farms is acceptable.

However, compared to only 2-3 years ago when almost one half of the republic's kolkhozes and sovkhozes operated on an unprofitable basis and the withdrawal of such lands caused no special difficulty, following the increases in purchase prices for agricultural products and the adoption of a number of other measures aimed at strengthening the farm economies, the number of such farms decreased considerably. And peculiar situations arose in a number of areas: for all practical purposes, almost no increase took place in the opportunities available for mastering unused land and these farms emerged from the category of unprofitable or low profitability farms. Thus lands continue to lie fallow which, if an informal approach was employed, could produce a return.

Such was the situation on the subsidiary farm of the Rechitsaneft' Oil and Gas Procurement Administration. Last year, 30 tons of meat and 10 tons of vegetables were obtained here over a period of just 6 months, the construction of still another pigsty for 1,000 animals is nearing completion and the erection of a farm for the fattening of cattle is being planned. The oil workers restored order to those tracts of land which became available following the completion of production operations and, using their own resources, they carried out reclamation work and obtained 38 quintals of grain per hectare last year. Alongside these lands are the water-logged tracts of the Sovkhoz imeni 24th CPSU Congress, which are located 40 kilometers from the farm's center and which for all practical purposes are not being used. The oil workers have land reclamation equipment and financial and material resources at their disposal and, most important, they are moved by a desire to restore order to the land. Then why is it that these tracts are not made available for strengthening the subsidiary farm? The return from these lands would increase immeasurably. And the leader of the sovkhoz could consent to transferring the tracts and tomorrow he could be punished for having "squandered" the land. And such cases are not singular in nature.

A very important factor and one which is restraining the development of subsidiary farms is the extremely small amount of assistance being provided to the enterprises by individual ministries and departments. Of the union ministries, Minzhivmash, Minstankoprom /Ministry of the Machine Tool Industry/, Minpribor, Minvodkhoz /Ministry of Land Reclamation and Water Resources/ and Mingeo /Ministry of Geology/. The same position has been taken by the republic's Minevtotrans /Ministry of Motor Transport/, Minzhilkomkhoz /Ministry of Housing and Municipal Services/, Goskomsel'khoztekhnika, the Administration of the Belorussian Railroad and Belglavenergo. Slightly more than 300,000 rubles were released for this purpose by the BSSR Minlegprom /Ministry of Light Industry/, to which 67 enterprises are subordinate, 51 of which each has more than 1,000 workers. The Ministry of Local Industry found only approximately 100,000 rubles. It is difficult to expect fine results from such a situation.

The development of subsidiary farms using bank credits definitely makes it possible to solve the problem. However the normative reimbursement period for which the credits were issued was established at 6 years. In the case of livestock husbandry production, the computations as a rule do not confirm such reimbursement. An increase in this period to at least 10 years would expand the possibilities for using credits. A number of questions concerned with regulating the activities of subsidiary farms must be reflected in the Statute for a Subsidiary Farm, the development of which is nearing completion.

During the development of subsidiary farms, attention must be given to the processing of the agricultural products produced on them. At some enterprises producing 20-30 kilograms of meat per worker, thought must be given to creating small departments for the production of meat and sausage products. Perhaps it would be advisable to introduce additional capabilities for processing meat using shareholder funds. The subsidiary farms also have other problems.

In short, considerable work is being carried out in the interest of developing subsidiary farms throughout the republic. However the programs for developing these farms will be more effective if tense but realistic tasks and specific measures for improving the production of goods are defined for each enterprise.

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PROFITABILITY IN UZBEK AGRICULTURAL ENTERPRISES EXAMINED**Strengthen Unprofitable Enterprises**

Tashkent EKONOMIKA I ZHIZN' in Russian No 3, Mar 85 pp 23-24

Article by R. Rakimdzhanov, deputy chief of the Department for the Administration of Agricultural Finances of the UzSSR Ministry of Finances: "Profit Commences With An Analysis of Expenditures"/

Text/ The vast amount of assistance which the state has furnished to the republic's kolkhozes and sovkhozes has created favorable conditions for strengthening their economic independence and for increasing, on this basis, the production and procurement volumes for the principal types of agricultural products. A great amount of attention has been given to overcoming the backwardness of unprofitable and low profitability farms of which, unfortunately, there are still many throughout the republic.

For example, 217 of 604 sovkhozes attached to UzSSR Minsel'khoz Ministry of Agriculture/ sustained losses during 1983. The preliminary results for 1984 reveal that the number of such farms has increased and amounts to more than 37 percent. There are many unprofitable farms within the UzSSR Minplodoovoshchkhоз Ministry of the Fruit and Vegetable Industry/ system, Goskomptitseprom, Glavsredazirsovkhozstroy and SAO of VASKhNIL All-Union Academy of Agricultural Sciences imeni V.I. Lenin/. Of 858 kolkhozes, 189 operate on a low profitability basis.

As a result of non-fulfillment of their profit plans, the kolkhozes and sovkhozes are experiencing a large shortage in internal working capital; they are in debt in terms of overdue Gosbank loans and unpaid accounts with suppliers. The financial status of the farms is aggravated by the diversion of working capital in large amounts for non-plan goals.

The principal causes of unprofitable and low profitability operations -- the non-fulfillment of established tasks for the production and sale of agricultural products to the state, increased production costs for such products and unproductive expenditures and losses.

According to the results for 1983, the increase in output production costs at sovkhozes of UzSSR Minsel'khoz, compared to the figure planned, amounted to 400.8 million rubles or 19.8 percent. The losses caused by livestock losses amounted to 43.9 million rubles, from the maintenance of barren cows -- 22.7

and from above-plan losses for maintenance of the municipal-housing economy -- 26.4 million rubles.

As a result of the introduction of the new purchase prices and bonuses, the principal types of products became profitable (with the exception of certain types of livestock products). At the same time, the production costs for products produced by low profitability and unprofitable farms not only exceed to a considerable degree the average branch indicator, but in some instances even the earnings received for the products with the bonuses being taken into account.

Yes and throughout the republic as a whole, the trend in recent years has been towards constant growth in this most important indicator. Thus, compared to 1980 when the expenditures for the production of 1 quintal of raw cotton at sovkhozes of UzSSR Minsel'khoz amounted to 50 rubles and 17 kopecks and at kolkhozes -- 45 rubles and 45 kopecks, in 1981 the figures were respectively 52 rubles and 58 kopecks and 46 rubles and 36 kopecks, in 1982 -- 53 rubles 66 kopecks and 47 rubles 21 kopecks, in 1983 59 rubles and 41 kopecks and 51 rubles and 64 kopecks. The growth during these 3 years amounted to 18.4 percent for sovkhozes and 13.6 percent for kolkhozes.

As an economic category, the production cost is a synthesis of the quality of farm management, the degree of development of cost accounting, the use of scientific-technical achievements, the status of labor discipline and the results of a campaign waged against non-productive expenses.

As a rule, one of the most important causes of low profitability and unprofitable farm operations is that of poorly organized work by the economic services. They consider their function to be mainly that of monitoring the situation. Economic levers are not employed here as an instrument for intelligent and zealous management. This is borne out by facts uncovered by workers attached to the UzSSR Ministry of Finances, especially at the Sovkhoz imeni U. Yusupov in Syr-Darya Oblast and at the Kolkhoz imeni Navoi in Dzhizak Oblast. Nobody ever analyzed the material and financial expenditures here -- by elements, types of products, types of work, by months or by an increasing total from the beginning of the year and compared to the plan. And indeed intelligent management commences with just such an analysis.

During this modern stage, agrarian policy is attaching greater importance to the introduction of an effective mechanism for management at all levels. And this requires not only an improvement in the organizational methods for management but also an increase in the level of economic thought by agricultural personnel. Economic thought, which is becoming a powerful force, offers vast opportunities for raising the effectiveness of production.

Economic thought -- this assumes an ability to handle a specific economic situation, to select the proper variant for management and to exert an active influence on the intensive development of production operations at kolkhozes and sovkhozes.

"On the whole, it is extremely important" emphasized Comrade M.S. Gorbachev, secretary to the CPSU Central Committee, in a speech delivered before the All-Union Economic Conference on Problems of the Agroindustrial Complex, "to

strengthen economic operations at kolkhozes, sovkhozes and other enterprises of the agroindustrial complex. It is wrong to think that this is a concern only of the economic services. Each leader and specialist and each technologist must be a fine economist, be fully responsible for the quality indicators of a collective's work and instill a taste for economic analysis in all workers attached to the agroindustrial complex."

In conformity with the decree of the CPSU Central Committee and the USSR Council of Ministers entitled "Measures for Improving the Economic Mechanism and Strengthening the Kolkhoz and Sovkhoz Economies," organizational-technical measures aimed at lowering production costs and raising production efficiency must be carried out in the various areas. Actually, such measures have either not been developed on the republic's low profitability and unprofitable farms or they are of a general or formal nature. And this can be easily explained: in the absence of a strict and intensive economic analysis of the causes of unprofitable operations, it will be impossible to devise realistic means and methods for eliminating them.

Economist on Profit Distribution

Tashkent EKONOMIKA I ZHIZN' in Russian No 3, Mar 85 p 24

Article by A. Alimzhanov, candidate of economic sciences: "Unified Principles for Profit Distribution -- For APO Enterprises"

Text Further improvement in the economic mechanism for an APO /agroindustrial association/ assumes more active use of the cost categories (money, prices, wages, credit and finances) in expanded reproduction. The organization of finances for agroindustrial associations acquires special importance in this regard.

One of the most important problems associated with organizing cost accounting operations for associations -- the distribution of profits. An optimum solution for this problem will have a great stimulating effect on the development of each subordinate enterprise of an APO and it will also serve to raise the efficiency of all agroindustrial production.

The distribution of profit within an APO must ensure maximum coordination of the economic interests of enterprises functioning as part of an overall complex and those of the entire association with the national interests and it must also intensify their interest in achieving constant growth in production.

At the present time, different methods are being employed for distributing profits within agricultural and industrial subunits subordinate to the APO of the UzSSR Minplodoovoshchikhoz /Ministry of the Fruit and Vegetable Industry/ and this is lowering the role played by profit as a stimulus for strengthening production efficiency within the complex.

For example, at the Namangan APO of UzSSR Minplodoovoshchikhoz, the proportions for distributing profit in terms of all items differ substantially, since the changes which took place as a result of merging independent enterprises into a single economic organism were completely ignored. The disproportions which

arose during the formation of the economic incentive funds were particularly pronounced. Thus, in 1983 the proportion of economic incentive funds in the balance profit for agriculture amounted to 38.3 percent and in industry -- 21.4 percent. This indicator amounted to 98.6 rubles per worker in agriculture and at processing enterprises -- 286.9 rubles.

In addition, processing enterprises do not participate in the formation of the insurance fund for an APO, the fund for awarding bonuses to specialists and leading workers for having realized a profit or to the centralized funds for economic stimulation.

Under these conditions, it would seem to be correct to convert over to the complete centralization of APO profits. However, the need for preserving the legal independence of integrated enterprises precludes the possibility of doing this.

There is a compromise solution: further improvements in the distribution relationships in an APO must be directed towards gradually converting the agricultural and industrial enterprises over to the use of unified principles for profit distribution and without changing the organizational structure of the organizations in the process. Certain corrections which conform more to the specific nature of a single production-economic complex can be introduced into the profit distribution process.

Such reorganization requires a change in the system and conditions for the formation of economic incentive funds at both agricultural and industrial enterprises. Within the framework of an association, the final production results of an individual enterprise are determined to some degree by the work carried out by mutually associated farms. Thus the formation of funds at all of the enterprises should ideally be carried out based not only upon the results of internal production but also upon the final results of the association as a whole. I propose the following in this regard: one of the two fund forming indicators should be established depending upon the final indicators of the APO and the second should be determined based upon the branch affiliation of the enterprises.

In this instance, it appears to be inadvisable to have three incentive funds in the APO at one and the same time -- material incentive fund, centralized material incentive fund and the fund for awarding bonuses to specialists and leading workers for having earned profit. Essentially there is no difference between the material incentive fund and the fund for awarding bonuses for profit realized: the first is used for awarding bonuses to all APO workers and the second is used only for specialists and leaders attached to agroindustrial enterprises. Workers assigned to the corresponding category of processing enterprises are not covered by the fund for awarding bonuses for profit realized.

Since, when reorganizing the economic mechanism of the APO it is inadvisable to creat a separate fund for awarding boses for profit realized for individual categories of workers, the resources in the fund for awarding bonuses and its functions can be turned over to the material incentive fund and the centralized fund for material incentives.

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MEASURES TO IMPROVE TIMBER SUPPLY DISCUSSED**Eliminate Deficiencies, Utilize Potential**

Moscow MATERIAL 'NO-TEKHNICHESKOYE SNABZHENIYE in Russian No 2, 1985 pp 29-32

/Article by V. Vorob'yev, deputy chief of Soyuzglavles: "National Economic Requirements and Reserves of Timber Procurement Organizations"/

/Text/ The decree of the CPSU Central Committee and the USSR Council of Ministers entitled "Improving the Utilization of Forestry Resources" is an important party and economic document. It calls for measures aimed at achieving more complete and efficient use of forestry resources in the interest of further developing the country's economy, ensuring the timely reproduction of the forests and the planned satisfaction of the requirements of the national economy and population for wood and other forestry products.

By no means is it an accident that increased attention is being given to the work of enterprises and organizations of the timber and wood-working industry. Actually, over a period of many years they have been supplying industry, construction and agriculture with forestry products in an extremely unsatisfactory manner. Practically speaking, all of the ministries and departments -- suppliers -- are systematically failing to carry out their established plans for the particular nomenclature. The consumers are not receiving the full amounts of such needed products as saw logs and lumber. The disruptions tolerated by USSR Minlesbumprom [Ministry of the Timber, Pulp and Paper and Wood Processing Industry] have slowed down considerably the development of a number of national economic branches.

The enterprises of this ministry and also of USSR Gosleskhoz [State Committee for Forestry of the USSR Council of Ministers] tolerated a lag in the shipments of lumber and sawn timber last year. The principal reasons -- weak use of production capabilities, shortcomings in the organization of timber procurements, inefficient use of forestry resources, weak control by the ministry over the carrying out of planned tasks.

The production of forestry products in the required assortment has been adversely affected by the less than intensive introduction of scientific-technical achievements into the timber procurement industry. The level of mechanized labor is low.

Only weak use is being made of the available timber procurement equipment, especially skidding tractors and timber carriers. The economists have estimated that if each tractor is operated for one additional shift during a quarter, the ministry will be able to ship approximately 1 million additional cubic meters of wood. The chief reserve of the procurement specialists lies in reducing the equipment idle time and raising the coefficient of shift operations for the equipment.

Railroad transport is guilty of causing disruptions to take place in contractual obligations. Last year, as a result of non-delivery of freight cars, the consumers were undersupplied by more than 4 million tons of forestry freight.

The shortcomings which persist with regard to supplying the national economy with forestry products are largely associated with the fact that the bases and storehouses available in our system for the storage of wood are of low capacity and have a low indicator for freight turnover. The shipping points for forestry materials are weakly developed and poorly mechanized. All of this is delaying timely shipments of forestry freight by rail and it is failing to promote the extensive introduction of shipping and multi-stage routes.

In the interest of eliminating the existing shortcomings, the decree of the CPSU Central Committee and the USSR Council of Ministers calls for the carrying out of large-scale measures aimed at improving the structure and increasing the production of forestry products and improving the processing technology for wood. Based upon a scientifically sound approach for utilizing timber resources, USSR Minlesbumprom and USSR Gosleskhoz are tasked with developing and carrying out measures for ensuring stable operation of the timber and wood-working industry and making available to production all of the reserves on hand for further expanding the production of forestry products and the deliveries of such products to the consumers.

The concentrated carrying out of wood procurements and shipments, mainly at enterprises and organizations of Minlesbumprom USSR and in regions where this ministry is the principal timber procurement agency, is recognized as being advisable.

What is happening at the present time? In accordance with the Soyuzglavles plan, for example, wood deliveries are to be carried out from approximately 2,500 mainly small timber procurement points. As a rule, they will ship the timber in small batches -- from 1 to 10 freight cars daily. Only 17 percent of the procurement organizations are shipping it in larger batches. Such a dispersion of forces and resources does not promote the timely delivery of products in response to consumer orders. The shipping of timber by other departments generally does not lend itself to analysis.

The planned consolidation of timber procurement organizations and their concentration in one ministry will serve to strengthen delivery discipline, ensure more complete fulfillment of the many orders by consumers and, most important, it will increase sharply the level of route shipments by 1990.

A large volume of work remains to be carried out by the organs of USSR Gossnab. Additional and efficient transport plans will be developed and approved this

year jointly with USSR Gosplan, MPS /USSR Ministry of Railways/, USSR Minlesbumprom and USSR Gosleskhoz. The plans call for the more complete utilization, for this purpose, of motor, water and mixed types of transport and an increase in the volume of wood to be transported by water.

Soyuzglavles has developed and approved a unified approach for the concentration of timber shipments. It calls for a determination of the chief routes for the flow of freight, routes which could become the basis for composing an industrial order by rayons for the production of individual types of products. Optimization of the distribution of the overall production capabilities of suppliers, depending upon the shortest transport distances, will make it possible to lower considerably the ton-kilometer operation of railroad transport.

Sound requirements are being imposed upon our bases, storehouses and forestry material shipment points. Their low traffic handling capability, shortage of mechanized equipment and weak organization of labor at rail-served storehouses are becoming a serious obstacle with regard to the proper organization of shipments. This is why the plans call for the loading points to be strengthened and for the annual freight turnover of timber bases and storehouses in non-forested and lightly-forested regions to be raised to 15 million cubic meters.

In order to restore order, a great amount of work must be carried out by our main administration and territorial organs in the various areas. Beyond any doubt, the principal volume of work must be carried out during the 12th Five-Year Plan. The carrying out of large-scale measures requires investments of forces and resources in the organization of construction operations and an overall improvement in procurement work. Decisive importance is being attached to exercising constant and efficient control over the carrying out of contractual obligations in the established nomenclature, in accordance with contracts concluded and orders issued.

During the period which has elapsed since the adoption of the decree of the CPSU Central Committee and the USSR Council of Ministers on strengthening delivery discipline, the collective of Soyuzglavles and the territorial organs of supply have intensified their control over the timely carrying out of timber deliveries. As a rule, on the eve of each planning period for a quarter, we evaluate the expected fulfillment of delivery plans in accordance with the chief trends. They are determined based upon the priorities established by USSR Gossnab and also by the consumption specifics for individual types of forestry products in the national economy.

The initial data for this work includes: fulfillment of the production plans by the ministries and departments -- the suppliers -- and an analysis of the deliveries of the principal nomenclature of products from the standpoint of the fund-holders and more important trends. The general line developed for a planned period in the consolidated indicators is defined more precisely for each individual rayon. A department created in Soyuzglavles for controlling deliveries by production regions carries out this work jointly with timber marketing and supply organizations in the various areas, where the principal trends with regard to deliveries are set forth in detail for each consumer.

The assignment of delivery priorities to loading points is carried out by special control services of timber supply and marketing administrations, through authorized representatives located at these points. And at those places where such representatives are not present -- directly through the marketing organs of the consignor-enterprises.

Commodity departments are responsible for the following: exercising control over timber deliveries in keeping with the more important trends, ensuring uniformity in the carrying out of deliveries and carrying out individual tasks in Soyuzglavles and in the timber supply and marketing organizations. Thus control over uniformity and priorities in delivering timber to consumers is carried out in accordance with the program "Soyuzglavles - timber supply and marketing organization - shipping point."

Information on the carrying out of deliveries moves in the opposite direction. The railroad loading points issue reports on work carried out during the past 24 hours through the timber supply and marketing organization.

The reports are processed prior to 1100-1200 daily, after which the timber supply and marketing leaders hand down the appropriate decisions. The consolidated indicators for a rayon for the past 24 hours are transmitted to Soyuzglavles via teletype or telephone. This data also includes the delivery of mine supports to the coal and mining industry and timber materials addressed to enterprises of USSR Gosnab, the agroindustrial complex, the market fund, construction ministries and other controlled directions.

From the standpoint of the fund-holders, the reports on deliveries of forestry products are transmitted daily to Soyuzglavles by the timber supply and marketing organization and those concerning timber shipments using the floating method -- twice monthly throughout the entire navigation season and reports on deliveries to consumers in the production areas -- once monthly. Such periodic reporting is making it possible to uncover disruptions in deliveries in a timely manner.

Unfortunately, we do not have information available on timber deliveries to individual consumers. This control has been entrusted entirely to the timber supply and marketing organizations in the production regions. It still does not appear to be possible to organize control over each consumer in our main administration. Here the work is hindered by difficulties associated mainly with the processing of a large flow of information. But this is not meant to imply that we are not attempting to resolve specific problems. Owing to the fact that the delivery plans are not being fulfilled, many consumers turn directly to us. It is at such times that we undertake a very thorough study of the problem.

For example, for a long period of time the Belgorodstroydetal' Wood-Working Plant was unable to obtain from the timber procurement agencies in Perm Oblast the saw timber allocated for it in accordance with the funds. Owing to an absence of raw materials, a breakdown occurred in the production of carpentry products required for housing construction. In some instances, the builders were forced to assemble their homes using panels in which there were no carpentry items.

The plant requested assistance from Soyuzglavles, since the western Urals main territorial administration in which the plant was located had not undertaken effective measures. Soyuzglavles sought an opportunity for satisfying the request of the consumer. The required amount of saw log raw materials was dispatched to it on an urgent basis. In November of last year, assistance was furnished in implementing the funds for builders in Stavropol Kray, Sochi, Kursk, Lipetsk and for many other consumers.

It bears mentioning that last year the situation was especially tense with regard to supplying the national economy with timber. The "hottest points" were Krasnoyarsk and Khabarovsk krays and the Komi ASSR. The Soyuzglavles workers, jointly with the territorial organs, conducted a very thorough analysis of the causes of the breakdown in deliveries. The most difficult questions were examined in USSR Gossnab, USSR Minlesbumprom and by other interested organizations.

The level of fulfillment of the production plan by procurement specialists in the Komi ASSR was especially low. The principal supplier for this region -- the Komilesprom All-Union Timber Industry Association -- has not coped with its delivery plan in terms of nomenclature for a number of years. As a result, the consumers are failing to receive many millions of rubles worth of timber products which they need. Analysis has shown that such impressive indebtedness derives from shortcomings in production planning and also from the continuing practice of making corrections to the plans.

Moreover, the branch's staff is not taking into account one important factor -- the production capabilities and labor, financial and logistical resources which Komilesprom has at its disposal. Each year the ministry plans a comparatively high increase in the production of goods and yet the association does not achieve it. Hence -- unrealistic orders.

Accepting frequent changes to its plans, the ministry tends to favor seniority and a departmental attitude as it ships timber first of all to its own enterprises. All of this adversely affects discipline in delivery operations.

The situation is complicated by the unsatisfactory availability of freight cars for the loading of forestry products. Here the "leader" was the Northern Railroad. The timber procurement agencies in Arkhangelsk Oblast and the Komi ASSR are supplied with freight cars sufficient for satisfying only 50-60 percent of their requirements. During the summer, this indicator is the norm for the railroad workers. And the average annual level for the availability of freight cars for transporting forestry products on this railroad -- slightly more than 80 percent. The work of the Krasnoyarsk and Oktyabr' railroads leaves much to be desired.

The raised requirements imposed upon the organs of USSR Gossnab have called for the adoption of urgent measures aimed at strengthening the discipline for deliveries. In accordance with the initiative displayed by Soyuzglavles in certain main territorial administrations, including the Central Urals, Krasnoyarsk, Komi, east Siberian and Khabarovsk, which are the principal timber procurement regions, our authorized representatives have been sent to the largest loading points.

Naturally, this is an emergency measure. It was dictated by the need for controlling shipments of forestry products. The authorized representatives are obligated to exercise systematic control over the production volumes, distribute the freight cars to be used for loading the timber, ensure that they are utilized correctly and supply information to the timber supply and marketing organizations on the course of the delivery operations. In addition, considerable importance is attached to checking upon the data in the commodity-transport invoice to ensure that it conforms to the actual weight of the products in a freight car. Experience reveals that the weight of the freight listed in the accompanying documents, prepared by the consigner, is inflated by roughly 3 tons per freight car. Suppliers in Khabarovsk Kray and in Vostochno Sibirskiy Rayon are especially guilty in this regard.

Local production conditions for individual types of products often create great difficulties with regard to regulating deliveries. Deserving of attention in this regard is the 3 years of experience accumulated at the Tyumen Main Territorial Administration in regulating timber deliveries on the Ivdel - Ob Sector of the Sverdlovsk Railroad. The new technology for planning transport operations makes it possible, even when there is a shortage of resources and freight cars, to ensure route timber shipments. In the process, strict control over the carrying out of contracts and orders is achieved.

A number of timber industry establishments and wood-working enterprises of the Tyumen'lesprom Association and the forestry administration operate along the Ivdel - Ob Sector. Each day, 150 freight cars are loaded up with products in this sector. At the Verkhnekondinsk Station of the Serov Branch of the Sverdlovsk Railroad, a department has been created for the transporting of forestry freight within the structure of the Tyumen timber supply and marketing organization. For the purpose of maintaining control, a portion of the workers attached to lessnabsbyt /timber supply and marketing/ has been transferred from Tyumen directly to the production areas for the forestry products.

The rights of this department are set forth in a special agreement signed by the railroad administration, the Tyumen'lesprom Association and the Tyumen'lessnabsbyt Administration. The new service is obligated to ensure the loading of products at all enterprises of this complex. The formation of the routes is the concern of the train dispatcher of the Department of Rail Movement. Tyumen'lessnabsbyt prepares the transport plans, which are presented to the railroad administration prior to the 16th day of the month preceding the one being planned. During this same period, Tyumen'lessnabsbyt prepares the loading plans for each station, with no instructions being given as to the station or rail destination, and presents them to the railroad administration, the supplier-enterprises, the Department for the Transporting of Forestry Freight and to Tyumen'lesprom.

Five days prior to the beginning of the month, the freight service of the railroad administration sends the Serov Branch two copies of the plan for the branch and the transport department. The branch delivers the plan to the stations, with no indication being given as to the rail destination.

Based upon the station transport plans, the Transport Department and the railroad branch prepare a summary plan for rail destinations. This is done for the purpose of maintaining a uniform accounting card for the entire complex

of supplier enterprises. Following approval, this summary plan becomes the principal legal document.

The monthly plans for the loading of forestry freight by routes are prepared by Tyumen'lessnabsbyt for the complex as a whole, they are coordinated with the Tyumen'lesprom Association and they are sent for approval to the administration of the Sverdlovsk Railroad.

Tyumen'lessnabsbyt sends the orders for shipping forestry products in accordance with the monthly plan directly to the Department for the Transporting of Forestry Freight. The shipper is pointed out in the orders. But it is possible for the orders to be sent to another supplier, provided the daily plan for route loading or the tasks associated with the approved transport plan for the rail destinations are guaranteed.

If the number of freight cars made available is less than the number called for in the daily plan, then the Transport Department distributes them among the loading stations depending upon the work volumes. The loading plan for several days into the future is made available to all of the station chiefs and to the leaders of the supplier enterprises. In this regard, the kind of freight and the types of freight cars must be pointed out.

The station workers and suppliers must maintain a strict account on the carrying out of the transport plan (with no indication being given as to the rail destinations). The rail destinations are recorded on the accounting card in accordance with the actual shipping carried out.

Each month the railroad branches and the Transport Department examine the course of fulfillment of the monthly plans for route loading, they determine the increase in the level of routing compared to the same month for the preceding year and they decide upon the total amount of fines to be levied for non-fulfillment of the loading plans for the rail destinations. All of this serves to raise the responsibility of the supplier enterprises and the railroad branches for the contractual obligations undertaken. Today the Tyumen Main Territorial Administration and Tyumen'lessnabsbyt rank high in our system with regard to carrying out timber deliveries to consumers. Working in a manner similar to other territorial organs, under conditions involving a shortage of resources and freight cars, they ensure complete deliveries of forestry products in all of the more important directions and, as a rule, in strict conformity with the plan. They are coping successfully with the individual and important tasks of Soyuzglavles.

One important fact bears mentioning. As a result of close interaction among transport and supply workers on the Ivdel - Ob Sector, the level of routing was raised noticeably (from 24.4 to 69 percent, compared to a country average of 19 percent). This constituted a considerable and positive result. Indeed, the higher the level of route shipments, the more rapid the delivery of freight.

The experience of the Tyumen Main Territorial Administration in organizing control over the shipping of timber materials testifies to the great potential possessed by our organs in the various areas. A thoughtful and thrifty approach in carrying out this work is making it possible to solve many difficult problems

in a positive manner. Greater initiative must be displayed, the suppliers must be dealt with in a more strict manner, a high degree of organization must be achieved in the area of logistical support and the operations of allied workers must be coordinated in a skillful manner.

The extensive dissemination of the experience accumulated by the Tyumen marketing personnel in the handling of forestry products will aid in eliminating the serious shortcomings which persist in the carrying out of delivery obligations, both in complete volume and nomenclature. An active search for reserves for further raising the efficiency of supply operations and the development and implementation of additional measures aimed at realizing unconditional fulfillment of the delivery plans will make it possible in our view to improve substantially support for the national economy in the form of forestry products.

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Marketable Stock Insufficient

Moscow MATERIAL'NO-TEKHNICHESKOYE SNABZHENIYE in Russian No 2, 1985 p 74

Article: "For High Quality Timber Materials"

Text In the article entitled "For High Quality Timber Materials" (Issue No. 7 for 1984), a question was raised concerning the need for examining the assortment structure of marketable funds for timber materials and achieving more complete satisfaction of the population's requirements for sawn timber, plywood, chipboard panels, plant-manufactured homes and sets of parts for them.

The chief of the Main Administration for Trade in Economic Goods of Tsentrinosoyuz /USSR Central Union of Consumer Societies/ Yu.I. Lobov has informed the Editorial Board that the question was presented properly in the article. At the present time, the requirements of the rural population for lumber are being satisfied by only 70 percent, sawn timber -- by 50 percent and plant-manufactured homes and sets of parts for them -- by slightly more than one third. Nor is the situation any better with regard to supplying the market with such construction materials as plywood or chipboard and fiberboard panels. However, USSR Minlesbumprom /Ministry of the Timber, Pulp and Paper and Wood Processing Industry/ is systematically failing to carry out the tasks for delivering these goods to the trade organizations in conformity with the funds allocated.

In particular, deliveries of timber materials are being carried out in an unsatisfactory manner by the supply-marketing organizations of the Krasnoyarsk, Central-Urals, East-Siberian, Tyumen, Khabarovsk, Komi and certain other main territorial administrations.

Tsentrosoyuz believes that USSR Gosplan and USSR Gossnab, in the interest of improving support for the population in the form of timber materials, should examine the question of increasing deliveries to the market of construction timber and sawn timber of coniferous strains. Commencing in 1985, a separate line should be planned for construction timber and sawn timber of coniferous strains in conformity with orders from Tsentrinosoyuz, with the plans calling for no more than 25 percent of the marketing funds.

A change must take place in the principal conditions for delivering forestry products, according to which the trade organizations are not authorized to determine the assortment of forestry materials to be delivered for sale to the population. Importance is also attached to carrying out a quarterly breakdown of the funds allocated for timber products, with the seasonal nature of construction operations being taken into account.

The time is at hand for allocating a definite percentage of specific types of sawn timber, together with the conventional types, which the purchaser can use for producing floor boards and carpentry products.

The chief of the Main Administration for Cultural, Consumer, Household and Haberdashery Goods Trade of the USSR Ministry of Trade S.N. Varenko has reported that, notwithstanding an increase in the marketing funds for the current year, the orders of USSR Mintorg /Ministry of Trade/ for sawn timber, chipboard panels and other materials for which there is a high demand are not being satisfied completely and the assortment and quality of the forestry products leave a great deal to be desired. For example, during the January - July period of last year, the plan for supplying the trade network with lumber was fulfilled by only 87 percent, sawn timber -- by 83 percent and plant-manufactured wooden homes -- by 91 percent.

The ministry has repeatedly turned to USSR Gosplan, USSR Gosnab and USSR Minlesbumprom with a request to improve support for the market in the form of forestry materials of the required assortment and quality. However, this problem has still not been resolved completely.

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CSO: 1824/302

KOMI ASSR TIMBER PROCUREMENT PROBLEMS, PROSPECTS DISCUSSED

Moscow LESNAYA PROMYSHLENNOST' in Russian 2 Apr 85 p 2

[Article by M. Chukichev, deputy chairman of the Komi ASSR Council of Ministers and Chairman of the Komi ASSR Gosplan, A. Kononov, head of the Forestry Department of the Komi Obkom of the CPSU, and Professor G. Kozubov, head of the Department of Forestry Biology Problems at the Institute of Biology of the Komi Affiliate of the USSR Academy of Sciences: "The Komi Forestry Complex"]

[Text] The Komi ASSR is one of the richest regions in the European USSR with respect to timber. Almost half of all the European North's commercial reserves are in the republic's forests.

The forests of the Komi ASSR provide the raw materials for the branch's largest enterprises--the Syktyvkar Industrial Timber Complex and the Kotlas Pulp and Paper Combine.

There are serious problems in the Komi ASSR's timber complex, however, the resolution of which will in great part determine its future. Branches of the timber industry complex have not yet developed into a unified economic system, and its individual components are not being developed evenly. Despite considerable total lumber reserves, its economically accessible volume does not exceed 1.2-1.4 billion cubic meters. The more productive forests in the southern part of the republic have already been exhausted to a considerable degree. More than 50 percent of the timber is made up of deciduous trees today. The release of timber to certain raw materials bases exceeds the calculated rate. At the same time, more than half of it is being hauled from the republic without being processed. The extensive method of timber management is used, and most of the concentrated fellings are left to reforest themselves with deciduous species.

The availability of considerable timber reserves, the intensive development of lumber processing, the construction of new enterprises and the modernization of existing ones, and development of the transport network are making it possible to work out and apply a number of steps aimed at sharply increasing effectiveness in the branches of the Komi ASSR's timber industry complex. An All-Union scientific and technical conference held in Syktyvkar dealt with this problem. It was arranged by the Interdepartmental Coordinating Council of the USSR Academy of Sciences, the Komi Obkom of the CPSU, the Komi ASSR Council of Ministers and the Komi Affiliate of the USSR Academy of Sciences.

It has become necessary to review the calculated felling rate for the Komi ASSR and reduce it from 34.2 million to 28 million cubic meters. This would make it possible to use the forests over the long term without exhausting them and to provide a reliable supply of raw materials for the Syktyvkar Lumber Industry Complex and the Kotlas Pulp and Paper Combine. It should be pointed out that even under the USSR Ministry of Timber, Pulp and Paper, and Wood Processing Industry's plan extending to 1990, the actual timber procurement volume for the Komi ASSR will not exceed 26 million cubic meters per year.

In order to reduce the quantity of unprocessed timber hauled out of the republic and to achieve more complete and comprehensive processing of the raw timber, we need to increase the amount of capital invested in the construction of shops for working deciduous and low-quality timber, mainly shops for the production of wooden panels.

In order to make more efficient use of the raw material, we should procure 3.5-4 million cubic meters of deciduous lumber each year more than is now procured. In order to achieve this goal, which is extremely important to the republic's economy, we must increase the amount of deciduous timber delivered to the Syktyvkar Lumber Industry Complex to 2.5 million cubic meters annually, and the amount delivered to the Kotlas Pulp and Paper Combine to a million cubic meters, as well as to significantly increase processing volumes at other enterprises of the republic. It would be expedient to consider the possibility of building a wood chemical complex and a facility for the production of feed from plant carbohydrates in the Komi ASSR. This would make it possible to use around 1 million cubic meters of deciduous lumber annually.

Considering the fact that the average area of a timber management enterprise in the republic is around 1.4 million hectares, it would be expedient to break up a number of forestry management enterprises and timber tracts as part of the 12th Five-Year Plan of the RSFSR Ministry of the Forestry Industry in order to provide for the timely and quality performance of reforestation projects and to improve timber management in the Komi ASSR. We must also increase the number of forest guards and the amount of capital investments and allocations designated for reforestation work, stabilizing them at the level achieved.

Lumber industry and timber management still do not actually have an adequately powerful and highly productive base machine suitable for use under the extreme conditions of the North. This problem could be solved with a joint effort by the USSR Ministry of Timber, Pulp and Paper, and Wood Processing Industry, the USSR Ministry of Tractor and Agricultural Machine Building, and the USSR State Committee for Forestry. There are practically no promising models at all, however.

Science has a large role with respect to the development of new equipment and technology and the application of the achievements of scientific and technological progress in the forestry complex. As a result, the Komi Affiliate of the USSR Academy of Sciences, the Scientific Council for the Comprehensive Use and Reproduction of Timber Resources of the MKS [not further identified] of the USSR Academy of Sciences in Leningrad, and branch scientific research and planning institutes must give special attention to organizing fundamental and applied research aimed at achieving highly efficient use of the Komi ASSR's lumber resources.

At the beginning of the article, I mentioned the fact that the basic branches of the Komi ASSR's forestry complex are not being developed evenly. This is primarily due to the fact that they are under different departments. In order to improve administration and achieve the balanced development of all components of the lumber industry complex and to concentrate the funds and labor resources, we must consider the possibility of setting up on an experimental basis a territorial, interbranch administration of the forestry complex, including in it the lumber procurement, woodworking, pulp and paper industries and forestry management. The "Forests of the Komi ASSR to the Year 2025," a special, comprehensive program developed on the basis of the "General Plan for Development of the Lumber, Pulp and Paper, and Woodworking Industry and Forestry Management of the Komi ASSR," could be used as the basis for the functioning of such an administration.

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